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APPENDIX TO THE JOURNALS

OF THE

SENATE AND ASSEMBLY

OF THE

TWENTY-FIFTH SESSION

OF THE

LEGISLATURE OF THE STATE OF CALIFORNIA.

Volume VI.

SACRAMENTO:
STATE OFFICE, ... JAMES J. AYERS, SUPT. STATE PRINTING.
1883.

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3—Report of Engineers on Seawall and Embankment at San Francisco.
4—Report of Lauren E. Crane, Expert, on the Construction of the Seawall at San Francisco.
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8—Report of Special Commission of Inquiry into the General Administration of the State Prisons of California.

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GENERAL BOOKBINDING CO.
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THIRD ANNUAL REPORT

OF THE

BOARD OF RAILROAD COMMISSIONERS

OF THE

STATE OF CALIFORNIA

FOR THE

Years ending December 31, 1880-81-82.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

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MEMBERS OF THE BOARD.

J. S. CONE, First District.....Red Bluff, Tehama County.

C. J. BEERSTECHER, Second District.....San Francisco.

GEN. GEO. STONEMAN, Third District.....San Gabriel, Los Angeles County.

W. R. ANDRUS.....Secretary.

F. V. STEINMANN.....Bailiff.

E. A. GIRVIN.....Stenographer.

OFFICE OF THE BOARD OF RAILROAD COMMISSIONERS:

No. 320 Sansome Street.....San Francisco.

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ACTS

RELATING TO THE

Powers and Duties of the Board of Railroad Commissioners.

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ACTS

DEFINING POWERS AND DUTIES OF THE BOARD OF RAILWAY COMMISSIONERS.

[From the Constitution of California.]

ARTICLE XII.

CORPORATIONS.

SECTION 17. All railroad, canal, and other transportation companies are declared to be common carriers, and subject to legislative control. Any association or corporation, organized for the purpose, under the laws of this State, shall have the right to connect at the State line with railroads of other States. Every railroad company shall have the right with its road to intersect, connect with, or cross any other railroad, and shall receive and transport each the other's passengers, tonnage, and cars, without delay or discrimination.

SEC. 18. No president, director, officer, agent, or employé of any railroad or canal company shall be interested, directly or indirectly, in the furnishing of material or supplies to such company, nor in the business of transportation as a common carrier of freight or passengers over the works owned, leased, controlled, or worked by such company, except such interest in the business of transportation as lawfully flows from the ownership of stock therein.

SEC. 19. No railroad or other transportation company shall grant free passes, or passes or tickets at a discount, to any person holding any office of honor, trust, or profit in this State; and the acceptance of any such pass or ticket, by a member of the Legislature, or any public officer, other than Railroad Commissioner, shall work a forfeiture of his office.

SEC. 20. No railroad company or other common carrier shall combine or make any contract with the owners of any vessel that leaves port or makes port in this State, or with any common carrier, by which combination or contract the earnings of one doing the carrying are to be shared by the other not doing the carrying. And whenever a railroad corporation shall, for the purpose of competing with any other common carrier, lower its rates for transportation of passengers or freight from one point to another, such reduced rates shall not be again raised or increased from such standard without the consent of the governmental authority in which shall be vested the power to regulate fares and freights.

SEC. 21. No discrimination in charges or facilities for transportation shall be made by any railroad or other transportation company between places or persons, or in the facilities for the transportation of the same classes of freight or passengers within this State, or coming from or going to any other State. Persons and property transported over any railroad, or by any other transportation company or individual, shall be delivered at any station, landing, or port, at charges not exceeding the charges for the transportation of persons and property of the same class, in the same direction, to any more distant station, port, or landing. Excursion and commutation tickets may be issued at special rates.

SEC. 22. The State shall be divided into three districts, as nearly equal in population as practicable, in each of which one Railroad Commissioner shall be elected by the qualified electors thereof at the regular gubernatorial elections, whose salary shall be fixed by law, and whose term of office shall be four years, commencing on the first Monday after the first day of January next succeeding their election. Said Commissioners shall be qualified electors of this State and of the district from which they are elected, and shall not be interested in any railroad corporation, or other transportation company, as stockholder, creditor, agent, attorney, or employé; and the act of a majority of said Commissioners shall be deemed the act of said Commission. Said Commissioners shall have the power, and it shall be their duty, to establish rates of charges for the transportation of passengers and freight by railroad or other transportation companies, and publish the same from time to time, with such changes as they may make; to examine the books, records, and papers of all railroad and other transportation companies, and for this purpose they shall have power to issue subpœnas and all other necessary process; to hear and determine complaints against railroad and other transportation companies, to send for persons and papers, to administer oaths, take testimony, and punish for contempt of their orders and processes, in the same manner and to the same extent as Courts of record, and enforce their decisions and correct abuses through the medium of the Courts. Said Commissioners shall prescribe a uniform system of accounts to be kept by all such corporations and companies. Any railroad corporation or transportation company which shall fail or refuse to conform to such rates as shall be established by such Commissioners, or shall charge rates in excess thereof, or shall fail to keep their accounts in accordance with the system prescribed by the Com-

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mission, shall be fined not exceeding twenty thousand dollars for each offense; and every officer, agent, or employé of any such corporation or company, who shall demand or receive rates in excess thereof, or who shall in any manner violate the provisions of this section, shall be fined not exceeding five thousand dollars, or be imprisoned in the county jail not exceeding one year. In all controversies, civil or criminal, the rates of fares and freights established by said Commission shall be deemed conclusively just and reasonable, and in any action against such corporation or company for damages sustained by charging excessive rates, the plaintiff, in addition to the actual damage, may, in the discretion of the Judge or jury, recover exemplary damages. Said Commission shall report to the Governor annually, their proceedings, and such other facts as may be deemed important. Nothing in this section shall prevent individuals from maintaining actions against any of such companies. The Legislature may, in addition to any penalties herein prescribed, enforce this article by forfeiture of charter or otherwise, and may confer such further powers on the Commissioners as shall be necessary to enable them to perform the duties enjoined on them, in this and the foregoing section. The Legislature shall have power, by a two-thirds vote of all the members elected to each house, to remove any one or more of said Commissioners from office, for dereliction of duty, or corruption, or incompetency; and whenever, from any cause, a vacancy in office shall occur in said Commission, the Governor shall fill the same by the appointment of a qualified person thereto, who shall hold office for the residue of the unexpired term, and until his successor shall have been elected and qualified.

[From Statutes of California—1880.]

CHAPTER LVII.

An Act to compel railroad corporations, or individuals owning railroads, to operate their roads.

[Approved April 15, 1880.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. From and after the completion of any railroad, or the completion of such portion thereof capable of being operated, it shall be the duty of the corporation, or individual owning the same, to operate it; and upon the failure of said corporation or individual so owning said road to keep the same, or any part thereof, in full operation for the period of six months, its or his right to operate the same in whole or in part, as the case may be, shall be forfeited; and the lands occupied for the purposes of its or his road, so far as the same shall not be operated, shall revert to the original owners, or their successors in interest. A railroad shall be deemed to be in full operation when one passenger train, or one mixed train, is run over it once each day in each direction, and a sufficient number of freight trains to accommodate the traffic on said road.

SEC. 2. This Act shall not be construed to apply to a case where the operation of the road is prevented by the act of God, nor to a case where the operation of said road, together with its branch or trunk lines, does not yield income sufficient to defray the expenses of maintaining and operating the same in connection with its said branch or trunk lines.

SEC. 3. The Railroad Commissioners of the State of California shall have the power to examine and determine the question whether said road, together with its said branch and trunk lines, does or does not yield income sufficient to operate the same.

SEC. 4. This Act shall take effect immediately.

CHAPTER LIX.

An Act to organize and define the powers of the Board of Railroad Commissioners.

[Approved April 15, 1880.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The three persons elected Railroad Commissioners, pursuant to the provisions of section twenty-two, of article twelve, of the Constitution of this State, constitute, and shall be known and designated as the "Board of Railroad Commissioners of the State of California." They shall have power to elect one of their number President of said Board, to appoint a Secretary, to appoint a Bailiff, who shall perform the duties of Janitor; also to employ a Stenographer, whenever they may deem it expedient.

SEC. 2. The salary of each Commissioner shall be four thousand dollars per annum; the salary of the Secretary shall be twenty-four hundred dollars per annum; the salary of the Bailiff shall be twelve hundred dollars per annum, such salaries to be paid by the State of California in the same manner as the salaries of State officers are paid. The Stenographer shall receive a resonable compensation for his services, the amount to be fixed by the State Board of Examiners, and paid by the State. Said Commissioners, and the persons in their official

employment when traveling in the performance of their official duties, shall have their traveling expenses other than transportation paid, the amounts to be passed on by the State Board of Examiners, and paid by the State. Said Board of Railroad Commissioners shall be allowed one hundred dollars per month for office rent, and fifty dollars per month for fuel, lights, postage, expressage, subscriptions to publications upon the subject of transportation, and other incidental expenses, to be paid by the State; *provided*, that all moneys remaining unexpended at the expiration of each fiscal year shall be returned to the State treasury. Said Board is further authorized to expend not to exceed four hundred dollars for office furniture and fixtures, to be paid by the State. The State shall furnish said Board with all necessary stationery and printing, upon requisitions signed by the President of said Board.

SEC. 3. Said Commissioners, and the persons in their official employment, shall, when in the performance of their official duties, have the right to pass free of charge on all railroads, steamers, ships, vessels, and boats, and on all vehicles employed in or by any railroad or other transportation company engaged in the transportation of freight and passengers within this State.

SEC. 4. It shall be the duty of the Attorney-General, and the District Attorney in every county, on request of said Board, to institute and prosecute, and to appear and to defend, for said Board, in any and all suits and proceedings which they or either of them shall be requested by said Board to institute and prosecute, and to appear in all suits and proceedings to which the Board is a party, shall have precedence over all other business except criminal business; *provided*, that said Board shall have the power to employ additional counsel to assist said Attorney-General, or said District Attorney, or otherwise, when in their judgment the exigencies of the case may so require. The fees and expense of said additional counsel to be determined by the State Board of Examiners, and paid by the State.

SEC. 5. The office of said Board shall be in the City of San Francisco. Said office shall always be open (legal holidays and non-judicial days excepted). The Board shall hold its sessions at least once a month in said City of San Francisco, and at such other times and such other places within this State as may be expedient. The sessions of said Board shall be public, and when held at a place other than the office in the City of San Francisco, notice thereof shall be published once a week for two successive weeks before the commencement of such session, in a newspaper published in the county where such session is to be held; and if no newspaper is published in such county, then in a newspaper published in an adjacent county. Such publication to be paid by the State in the manner as other publications authorized by law are paid.

SEC. 6. The Board shall have a seal, to be devised by its members, or a majority thereof. Such seal shall have the following inscription surrounding it: "Railroad Commission, State of California." The seal shall be affixed only to, first, writs; second, authentications of a copy of a record or other proceeding, or copy of a document on file in the office of said Commission.

SEC. 7. The process issued by said Board shall extend to all parts of the State. The Board shall have power to issue writs of summons and of subpœna in like manner as Courts of record. The summons shall direct the defendant to appear and answer within fifteen days from the day of service. The necessary process issued by the Board may be served in any county in this State by the Bailiff of the Board, or by any person authorized to serve process of Courts of record.

SEC. 8. The Secretary of said Board shall issue all process and notices required to be used, and do and perform such other duties as the Board may prescribe. The Bailiff shall preserve order during the sessions of said Board, and shall have authority to make arrests for disturbances. He shall also have authority, and it shall be his duty, to serve all process, orders, and notices issued by said Board when directed by the President, and make return of the same.

SEC. 9. All complaints before said Board shall be in writing and under oath. All decisions of said Board shall be given in writing, and the grounds of the decision shall be stated. A record of the proceedings of said Board shall be kept, and the evidence of persons appearing before said Board shall be preserved.

SEC. 10. Whenever the Board shall render any decision within the purview and pursuant to the authority vested in said Board by section twenty-two, of article twelve, of the Constitution, said Board, or the person, copartnership, company, or corporation making the complaint upon which such decision was rendered, is authorized to sue upon such decision in any Court of competent jurisdiction in this State.

SEC. 11. Whenever said Board, in the discharge of its duties, shall establish or adopt rates of charges for the transportation of passengers and freight, pursuant to the provisions of the Constitution, said Board shall serve a printed schedule of such rates, and of any changes that may be made in such rates, upon the person, copartnership, company, or corporation affected thereby; and upon such service, it shall be the duty of such person, copartnership, company, or corporation to immediately cause copies of the same to be posted in all its offices, station houses, warehouses, and landing offices affected by such rates, or change of rates, in such manner as to be accessible to public inspection during usual business hours. Such Board shall also make such further publication thereof as they shall deem proper and necessary for the public good. If the party to be served, as hereinbefore provided, be a corporation, such service may be made upon the President, Vice-President, Secretary, or managing agent thereof, and if a copartnership, upon any partner thereof. The rates of charges established or adopted by said Board, pursuant to the Constitution and this Act, shall go into force and effect on the twentieth day after service of said schedule of rates, or changes in rates, upon the person, copartnership, company, or corporation affected thereby, as hereinbefore provided.

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SEC. 12. When jurisdiction is, by the Constitution, conferred on the Board of Railroad Commissioners, all the means necessary to carry it into effect are also conferred on said Board, and when in the exercise of jurisdiction within the purview of the authority conferred on said Board by the Constitution, the course of proceeding be not specifically pointed out, any suitable process or mode of proceeding may be adopted by the Board which may appear most conformable to the spirit of the Constitution.

SEC. 13. The said Board shall, immediately after entering upon the performance of its duties, demand and receive from the Transportation Commissioner, appointed under an Act approved April first, eighteen hundred and seventy-eight, section nine, chapter one, all public property belonging to the office of Transportation Commissioner, in his possession, or under his control, and it is hereby made his duty to deliver the same to the said Board.

SEC. 14. The term "transportation companies" shall he deemed to mean and include:

First—All companies owning and operating railroads (other than street railroads) within this State.

Second—All companies owning and operating steamships eagaged in the transportation of freight or passengers from and to ports within this State.

Third—All companies owning and operating steamboats used in transporting freight or passengers upon the rivers or inland waters of this State.

The word "company," as used in this Act, shall be deemed to mean and include corporations, associations, partnerships, trustees, agents, assignees, and individuals. Whenever any railroad company owns and operates, in connection with its road and for the purpose of transporting its cars, freight, or passengers, any steamer or other water craft, such steamer or other water craft shall be deemed a part of its said road. Whenever any steamship or steamboat company owns and operates any barge, canal boat, steamer, tug, ferryboat, or lighter, in connection with its ships or boats, the things so owned and operated shall be deemed to be part of its main line.

SEC. 15. The salaries of the Commissioners, Secretary, Bailiff, and all other officers and attachés in any manner employed by the Board of Commissioners, and all expenses of every kind created under this Act, shall be paid out of any money in the General Fund not otherwise appropriated, and the Controller of State is hereby authorized and directed to draw his warrants from time to time for such purposes, and the State Treasurer is hereby authorized and directed to pay the same.

SEC. 16. This Act shall take effect immediately.

FIRST ANNUAL REPORT

OF THE

Board of Railroad Commissioners.

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REPORT.

OFFICE OF THE BOARD OF RAILROAD COMMISSIONERS
OF THE STATE OF CALIFORNIA,
SAN FRANCISCO, February 4, 1881.

To his Excellency GEORGE C. PERKINS, *Governor:*

SIR: We respectfully submit the following as our first report. A more elaborate and detailed account of our work is rendered impossible for the present, by reason of illness, resulting from attempted assassination on the night of December 12, 1880, of one of the Commissioners, causing an unavoidable delay in action upon important business before the Board, and, as a necessary consequence, limiting the amount of work done.

The powers granted this Board are extraordinary in range and novel in composition. The Constitution divides the State Government into three coördinate departments: the Legislative, Executive, and Judicial, and inhibits persons charged with the exercise of powers belonging to one of these departments from the exercise of any functions appertaining to either of the others, thus dividing the powers, duties, and responsibilities. The Railroad Commission is made an exception in this general apportionment of the powers and obligations of government, neither constituted so as to belong to nor be under the direct control of either of the enumerated departments, yet granted powers in their nature appertaining to all three. Vested with the power of originating arbitrary rates for carriage of passengers and freight; the power to establish tariffs based on such rates, and the power to determine infractions, and cause punishment for violations of orders; with a jurisdiction thus extended, it is not a matter of surprise to encounter, from certain quarters, a clamor for hasty, inconsiderate action; a biased demand for execution of authority at random.

Were it compatible with an honorable and intelligent discharge of our official duties to, at random, fix rates of charges for transportation, the duties of the Board would be the opposite of onerous; but reason and justice alike dictate that the actions of this Board be governed by a desire to do right. That its decisions be the result of investigation, and a thorough understanding of the subjects passed upon. Caprice and prejudice will but confound, never solve, the transportation problem. The acquirement of the knowledge necessary for rational action in a matter so complex and intricate, is not the labor of an hour or a day, or any fixed period; comes not by intuition, but only through patient investigation and study. The State, in assuming the supervision and control of railroads and other methods of transportation, when the property of private persons or

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corporations, does so under the plea of necessary regulation. To sustain this plea, and not transcend its scope, State interference under it must not become confiscation and spoliation, but limit itself to what, on investigation, appears as just and reasonable regulations. The difficulties attending a just and efficient administration of our office need but mention to be appreciated. Our office and its duties is new. We are without precedent to guide us. Sister States and foreign countries have labored for years to solve the railroad problem, and to this day their actions have been experimental. While the efforts of others, for a period of over forty years, are valuable aids, they are far from infallible guides. The transportation problem in each State and country is a matter peculiar to that State and country. In the exercise of its authority, the Board must assume control over property whose ownership is private; the employment of private property in the various methods of transporting passengers and freights does not of itself divest private ownership in the thing so employed, and thereby constitute it public property. An erroneous idea prevails to quite an extent, that railroads built, owned, and operated by private corporations are nevertheless public property, and this in an unqualified sense.

Were this true, we would be free of the main difficulties surrounding our work. However much theorists may claim, and loose constructionists argue, the fact remains, that railroads owned and operated by private corporations, are private property, and this, though subject to State supervision and control. Among the number of circumstances to be considered in determining the status of railroad ownership in this State, but one needs mention. Does the property in railroads in this State pay taxes to the State, etc.? Does property owned by the State pay taxes? To whom is the property in railroads assessed? There cannot be a correct understanding of the onerous position this Board occupies until the idea that the railroads constituted in California are public property, is thrown aside as false. Were the railroads in this State public property, our duties would be most easy and pleasant. It would be the case of management of property by its owner. Whereas, under existing circumstances, it is the management of the property of others. An unprejudiced admission of the true condition of affairs in this connection can in nowise jeopardize, or even in the slightest curtail, the right of the State to change existing property right in and to the railroads, and to make them public property; but this change has not been effected, and therefore is not the reason of the present supervision and control.

The Hon. J. S. Black, in a letter to the Committee on Railroad Transportation of the New York Chamber of Commerce, dated November 16, 1880, uses the following language:

> Most of our western roads were built with the proceeds of public lands, granted mediately or immediately by the United States to the several companies which now have them in charge. They did not really cost the stockholders anything; and in some cases they got lands worth a great deal more than all expenses of making, stocking, and running the roads. * * * Nevertheless, I think the claims of these companies to take reasonable tolls, stands upon the same foundation as that of companies whose roads were built by the stockholders themselves, at their own proper expense. * * * That is to say, those companies which built the railroads with capital donated by the public, have the same right as other companies to charge a reasonable toll; but their demands of excessive tolls, though not worse in law, seems in the eye of natural reason, a great outrage. If railroad companies possess the right to charge a reasonable toll, and to appropriate its benefits to themselves, whence this right, if not as an incident of existing ownership?

A proper discharge of our duties demands that the rates which we may adopt and establish from time to time be just and reasonable. What is a just and reasonable rate depends on the service to be performed. A rate, to be just and reasonable, must be so to all parties interested in the transportation. We cannot herein, for reasons already stated, enter into a review, at this time, of what goes to make up the cost of transportation, and in what proportion this expense should be apportioned among the different commodities carried, nor what, in our opinion, will constitute a just and reasonable return to the carrier. These matters will be fully considered and our conclusions made public in another report to follow this as soon as attendant circumstances permit. Although, in common with the other State officers, we entered office in January, 1880, an organization of this Board could not take place, for want of necessary legislation, until May 3, 1880. The Act providing for the organization having become a law on April fifteenth, on May third the Commissioners met in San Francisco and organized as a Board. J. S. Cone, Commissioner from the First District, was elected President; W. R. Andrus, Secretary; and F. V. Steinmann, Bailiff. The Board proceeded at once to business. The Secretary was instructed to notify the several transportation companies to at once file in the office of this Board schedules of their fares and freights, as in force December 31, 1879, and January 1, 1880, stating the changes, if any, at time of filing. The companies, with one or two exceptions, complied as soon as circumstances permitted. The Pacific Coast Steamship Company refused to recognize the authority of the Board, and commenced suit in the United States Circuit Court to restrain the Board from in any way interfering with the business of the company. Proper steps have been taken, by the employment of counsel, etc., to defend said action. Copies of the pleadings in the case will be found in the Appendix hereto.

To give persons residing at a distance from the office of the Board, and who had complaints against the transportation companies, an opportunity to make the same to us in person, and also to inform ourselves by personal inspection of the condition of the roadbed, rolling stock, etc., of the several railroads of this State, and the accommodations and facilities given the traveling and shipping public by the transportation companies, we visited the following places in the order named, viz.:

Colton	San Bernardino County.	Marysville	Yuba County.
San Gabriel	Los Angeles County.	Chico	Butte County.
Los Angeles	Los Angeles County.	Red Bluff	Tehama County.
Wilmington	Los Angeles County.	Redding	Shasta County.
Anaheim	Los Angeles County.	Sacramento	Sacramento County.
Santa Monica	Los Angeles County.	Auburn	Placer County.
Redwood City	San Mateo County.	Truckee	Nevada County.
San José	Santa Clara County.	Colfax	Placer County.
Hollister	San Benito County.	Nevada City	Nevada County.
Monterey	Monterey County.	Stockton	San Joaquin County.
Santa Cruz	Santa Cruz County.	Modesto	Stanislaus County.
San Rafael and Tomales	Marin County.	Merced	Merced County.
Petaluma	Sonoma County.	Fresno	Fresno County.
Cloverdale	Sonoma County.	Visalia	Tulare County.
Gurneville	Sonoma County.	Bakersfield	Kern County.
Santa Rosa	Sonoma County.		

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In visiting the places named, we have traveled over 3,208 miles. Due notice was given of the time and place of holding our sessions, which were held in every instance in the most convenient place attainable, to accommodate the public; the utmost latitude permissible was accorded to persons appearing before the Board. Oral statements were received and phonographically taken by the Stenographer of the Board, and by him written out in longhand and filed in our office for reference. Justice was thus brought practically to every man's door, and all believing themselves aggrieved given an opportunity to make manifest their inquiry and secure redress. Most of the complaints were oral, and general, and not under oath. In every case where the Board has believed merit to exist, it has notified the company concerned, so as to have the wrong, if found to exist, remedied. The Board has found a cheerful willingness on the part of the several transportation companies to correct any irregularities as soon as found to exist, and a notification. Fourteen specific complaints were made to us; copies of which, together with copies of answers thereto, as received, are published herewith, as the Board considers them of value as illustrating the general nature of the complaints as made. We have, on divers occasions, propounded questions upon subjects pertaining to a solution of the transportation problem in this State to the several transportation companies, and have received prompt answers. We have lately caused to be served on the several railroad companies, carefully prepared questions in relation to their whole business as carriers. The answers, when received, which will be soon, will materially aid us in our labors, and in the work now occupying our attention—the fixing of just and reasonable rates for the transportation of passengers and freights.

We call attention in this connection to the letter of A. N. Towne, General Superintendent of the Central Pacific Railroad, dated January 5, 1881, appearing in our Appendix, as showing the labor necessary to answer but a few seemingly easy questions relative to the business of said railroad, and how necessarily this work increases when the questions amount to hundreds. We have labored assiduously since the time of our organization—nine months ago—to procure the necessary material to enable us to act understandingly and justly, and have succeeded to such an extent that we confidently hope and expect to make the benefits resulting from the creation of this Commission felt throughout the State very soon—to thorough justice—the execution of which can work harm to no man, bring about an era of good will between all interests concerned in the transportation question. In our inspection of the railroads we have found the standard gauge roads to be in first class condition, both as to roadbed and equipment. Whenever rails have become worn they have been replaced by first class steel rails. The narrow gauge roads, as a rule, are in equally good condition, though in some portions of some of the older narrow gauge roads, new rails should at once be substituted for the old and badly worn rails now used. The passenger and freight stations, and warehouse accommodations throughout the State, on all roads, as a rule, are good and ample. When the exception appears, we have the assurance that changes will at once take place.

This State contains at present 1,937.76 miles of standard gauge railroad, and 273.79 miles of narrow gauge railroad. There are 661 stations on the railroads of this State, where passengers and freight are received and discharged, distributed among the roads as follows:

Central Pacific Railroad (passenger stations only)	289
Southern Pacific Railroad	102
South Pacific Coast Railroad	38
Visalia Railroad	3
Santa Cruz Railroad	20
S. L. A. and S. M. Valley Railroad	8
North Pacific Coast Railroad	91
Vaca Valley Railroad	19
Nevada County Railroad	17
S. F. and North Pacific Railroad	74
Total stations	661

The tariffs of the several transportation companies (except the P. C. S. S. Company) are on file in our office.

A general reduction in freight charges has taken place on the Central Pacific Railroad and leased lines, in this State, during our term of office. We give a brief synopsis of the reduction, to illustrate its general character:

RATES ON GRAIN.

STATIONS.	FREIGHT PER TON. Was.	Is.	Reduction—Per Cent.
To San Francisco—From:			
Red Bluff	$6 00	$5 00	17
Chico	5 35	4 40	18
Marysville	3 25	3 25	
Roseville Junction	3 80	2 90	24
Merced	4 20	3 50	17
Goshen	6 00	5 50	8
Sumner	6 00	5 50	8
To Port Costa—From:			
Red Bluff	9 20	4 50	51
Chico	7 60	3 90	49
Marysville	5 80	2 75	51
Sacramento	3 20	2 25	30
Stockton	2 80	1 72	39
Lathrop	2 60	1 70	35
Modesto	4 60	2 35	49
Merced	8 60	3 00	65
Fresno	13 80	4 35	68
Goshen	17 00	5 00	70
Sumner	21 50	5 00	76
Mojave	22 80	5 00	76
Los Angeles	9 10	5 50	40
San José	4 00	2 45	39
To Stockton—From:			
Merced	3 05	2 35	23
Fresno	3 85	3 70	4
Goshen	4 85	4 35	10
Sumner	4 85	4 35	10
Mojave	4 85	4 35	10
Spadra	7 30	6 00	18

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RATES ON WOOL.

STATIONS.	PER HUNDRED POUNDS.		
	Was.	Is.	Reduction—Per Cent.
To San Francisco—From:			
Red Bluff	$1 05	$0 87	16
Chico	67	52	22
Marysville	45	39	13
Roseville Junction	39	39	
Merced	64	48	24
Goshen	93	60	35
Sumner	1 17	60	49
To Stockton—From:			
Red Bluff	99	87	11
Chico	67	52	22
Sacramento	22	22	
Merced	49	36	26
Fresno	59	45	23
Goshen	78	48	38
Sumner	1 02	50	51
Mojave	1 12	50	55
Spadra	72	65	9
To Sacramento—From:			
Red Bluff	90	75	17
Merced	65	48	26
Fresno	75	57	24
Goshen	94	60	31
Sumner	1 18	60	49

J. S. CONE,
Railroad Commissioner, First District.

C. J. BEERSTECHER,
Railroad Commissioner, Second District.

——— ———,
Railroad Commissioner, Third District.

APPENDIX.

COMPLAINT No. 1.

BEFORE THE HONORABLE THE BOARD OF RAILROAD COMMISSIONERS.

E. P. Wheeler vs. The Southern Pacific Railroad Company.

E. P. Wheeler, a citizen of Kern County, and doing business in the Town of Bakersfield as a merchant, complains of the Southern Pacific Railroad Company, and for cause of complaint alleges that the rates of freight charged and exacted by the railroad company, and paid by him on merchandise coming from San Francisco, and required in his business, are excessive and exorbitant, to wit: $2 35½ for first class of merchandise, $1 80 for second class, and $1 20 for third class per 100 pounds between this point and San Francisco, a distance of 314 miles; and more than the profits of his business will allow, and as compared with other railroads in the Atlantic States very unfair and unjust. For he is informed and believes that on the Atlantic and Great Western Railroad, for 319 miles, that is to say, from Salamanca to Richmond, the price on freight per first class is 63 cents per 100 pounds, second class 47 cents per 100 pounds, and third class 37 cents per 100 pounds. And on the Chesapeake and Ohio Railroad the freight or charge for transportation of merchandise for same distance, to wit: from Huntington to Meacham, to wit, 314 miles, is for first class 81 cents per 100 pounds, second class 73 cents, and third class 58 cents per 100 pounds, which are quite reasonable, and under which a merchant might be able to live. He, therefore, prays your honorable body to order and direct that the rate of freight on the Southern Pacific Railroad be reduced to a point approximating the rates of these said roads—that is to say, that they be required to reduce the present rates to the extent of fifty per cent, and for such further relief as your honorable body may think just and proper in the premises.

State of California, County of Kern, ss.

E. P. Wheeler, being duly sworn, says that he is the plaintiff in the above entitled action, that he has heard read the foregoing complaint and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true, this———day of September, 1880.

(Signed) E. P. WHEELER.

COMPLAINT No. 2.

BEFORE THE BOARD OF RAILROAD COMMISSIONERS IN AND FOR THE STATE OF CALIFORNIA.

Richard Hudnutt vs. The Southern Pacific Railroad Company.

And now comes before your honorable Board, Richard Hudnutt, a resident and citizen of Kern County, Town of Bakersfield, State of California, by occupation a farmer, and complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, and having its principal office and place of business in the City and County of San Francisco, and for cause of complaint alleges that the said Southern Pacific Railroad Company has fixed and established and exacts rates of freight on imports into and exports out of Kern County that are extortionate, exorbitant, and oppressive, and that he is informed and believes that it has made, and is making, unfair and unjust discrimination in favor of Los Angeles and against Kern County, its business men, and producers, by which he, in common with them, is injured and damaged by being thereby deprived of a large portion of the profits and earnings which he should rightfully derive from his business.

And for specific matters of complaint he sets forth that he is informed and believes that the average rate of freight charges between San Francisco and the Town of Bakersfield are, per carload, about as follows: First class, $1 20 per 100 pounds; second, $1 09; and third, $1 01—the distance being about 314 miles; that these extortionate rates are much less than are actually paid, because, owing to the infinite subdivisions of each class of freight, and every one being charged a different rate, the agents will not take freight at the foregoing rates unless of one kind of goods, which can rarely occur, and the rates paid are almost invariably those charged on lesser quantities, averaging about fifty per cent more than aforesaid carload rates; that he is informed and believes that these rates are on the average about six times as high as those charged on roads of corresponding and greater cost of construction as those connecting Bakersfield with San Francisco, and that have not been subsidized by the General Government, and from other sources, on the implied condition of aiding and promoting the development of the

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country; that he is informed and believes the average rate of freight charges between San Francisco and Los Angeles, per carload, are about as follows: First class, $1 30 per 100 pounds; second, $1 15; and third, $1 08—the distance being about 482 miles. Showing that freight is carried to Los Angeles, twice the distance (the 168 miles intervening between that place and Bakersfield being equivalent in cost of construction, and steep grades, to the 314 miles of road intervening between Bakersfield and San Francisco), for the comparatively trifling additional charge of ten cents on 100 pounds, first class; six cents on second class; and seven cents on third class freight; that he is informed and believes the rate of fare between San Francisco and Bakersfield is $17; a rate he is informed and believes three times as high as those of eastern roads for similar service; and he is informed and believes that between San Francisco and Los Angeles it is $23, showing that for $5 a service is performed for Los Angeles for which Bakersfield is charged more than three times as much, or $17, as aforesaid; that he is informed and believes that the rate of freight on wheat, by the carload, between Bakersfield and San Francisco, is $5 50 per ton; a rate as he is informed and believes more than twice as high as is usually charged for similar service on eastern roads, and that leaves to the producer no adequate margin of profit to encourage its production; that he is informed and believes that the rates of freights on all other articles of farm produce are so high as to prohibit their export; that he is informed and believes that your honorable Board will find, on investigation, that no good and valid reason exists why freights and fares should not be reduced between Bakersfield and San Francisco to the same rates that are prevalent with and found profitable by railroad companies in the Eastern States, who have built their roads with their own resources, and not with those generously and trustingly given by the Government and people.

And he prays your honorable Board to examine into and remove these causes of complaint, by establishing just and proper rates of fares and freights on the roads between Bakersfield and San Francisco, and as affecting the two places named, and the points intervening, and by publishing the same in such form that they may be understood, the schedule of fares and freights on file in the Recorder's office of this county being unintelligible to those for whose benefit the law required them to be so filed.

(Signed) RICHARD HUDNUTT.

State of California, County of Kern, ss.

Richard Hudnutt, being by me first duly sworn, says that he is the complainant in the above entitled suit; that he has read the foregoing complaint and knows the contents thereof, and knows it to be true, except as to such portions as are stated on information and belief, and as to those he believes them to be true.

(Signed) R. HUDNUTT.

Sworn to before me this thirty-first day of August, 1880.

(Signed) A. C. MAUDE, Notary Public.

COMPLAINT No. 3.

BEFORE THE HONORABLE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

David Hirshfield vs. The Southern Pacific Railroad Company.

David Hirshfield, a resident of Kern County, and doing business as a merchant in the Town of Bakersfield, complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, having its principal place of business in the City and County of San Francisco, and for cause of complaint alleges that the said railroad company, in utter disregard of the wants, requirements, and convenience of the people of Bakersfield, have located and established its principal depot and shipping point at a distance of a mile and a half from the said Town of Bakersfield, to wit, at the Town of Sumner, thereby causing the merchants and other business men of the said Town of Bakersfield great trouble, expense, and delay in obtaining the goods and merchandise shipped to them from San Francisco, and other points on the line of the said Southern Pacific Railroad.

And the complainant prays your honorable body to take such means as will remedy this grievance, and direct and require said railroad company to establish a station and depot at this place, or to construct a switch to such point as will best suit the convenience of the business community of Bakersfield, upon its inhabitants agreeing to pay one half the expense. And further, your complainant prays your honorable body to extend such further relief as may seem proper in the premises.

(Signed) W. H. BROOKS,
Plaintiff's Attorney.

State of California, County of Kern, ss.

David Hirshfield, being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

(Signed) DAVID HIRSHFIELD.

Subscribed and sworn to before me this — day of September, 1880.

COMPLAINT No. 4.

BEFORE THE HONORABLE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

L. Hirshfield & Co. vs. The Southern Pacific Railroad Company.

The said complainant, acting by Herman Hirshfield, a resident of and doing business in the Town of Bakersfield, Kern County, State aforesaid, complain of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, having its principal place of business in the City and County of San Francisco, and for cause of complaint allege, that some time in August last he received from Tulare 200 sacks of potatoes, weighing in the agggregate the sum of 20,000 pounds, or ten round tons, and was charged freight therefor the sum of $63, and which he paid. That the distance from Sumner to Tulare is sixty-three miles, and they therefore paid at the rate of ten cents per ton per mile, which he considers extortionate and unjust, and therefore prays your honorable body to establish and fix a rate of freight between the Towns of Sumner and Tulare that will be more in accordance with the rates charged upon other railroads, and thus will permit your complainant to make a living profit for his goods.

(Signed) H. HIRSHFIELD.

State of California, County of Kern, ss.

H. Hirshfield being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

(Signed) H. HIRSHFIELD.

Subscribed and sworn to before me this ninth day of September, A. D. 1880.

A. C. MAUDE, Notary Public.

COMPLAINT No. 5.

BEFORE THE HONORABLE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

W. H. Scribner vs. The Southern Pacific Railroad Company.

W. H. Scribner, a resident of Kern County, doing business in Bakersfield as a merchant, complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, having its principal place of business in the City and County of San Francisco, and for cause of complaint alleges: that the rate of fare for the transportation of passengers to and from this place and San Francisco, and to and from the intermediate places, is very much too high for the convenience of travelers, and for the promotion of that frequent and intimate intercourse which is especially to be desired among neighboring towns. And the said complaint alleges that said rates of fares seem to be fixed by no just rule, but rather by an arbitrary one of the company, which, to some places, is unfair and unjust. That he has been shown some statements comparing the rates of the Southern Pacific Railroad with those of other railroad companies in the Eastern and Atlantic States, and he is informed that on the former the rate varies from three and three quarter cents per mile to six cents per mile between San Francisco to Los Angeles, while on the latter the rates run from two and one half to three and one half cents per mile, fixed and certain, irrespective of the situation of the intermediate points. And, therefore, the complainant prays that the rate of fares charged on the Southern Pacific Railroad be reduced in a just ratio to that of the Atlantic roads, and that the same be fixed at so much, say three and one half cents per mile for each passenger for unlimited tickets, and three cents for limited tickets, or round trip. And your complainant prays your honorable body to adjust said rates in accordance with this complaint, and will give such further relief as may seem just and proper in the circumstances.

(Signed) W. H. SCRIBNER.

W. H. Scribner, being duly sworn, says that he is plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated upon information and belief, and as to those matters he believes it to be true.

(Signed) W. H. SCRIBNER.

Subscribed and sworn to before me this ninth day of September, A. D. 1880.

A. C. MAUDE, Notary Public.

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COMPLAINT No. 6.

BEFORE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

Michael Purcell vs. The Southern Pacific Railroad Company.

Michael Purcell, a citizen of the United States, a resident of Kern County, State aforesaid, and by occupation a sheep raiser, complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, having its principal place of business in the City and County of San Francisco, and for cause of complaint alleges that the said company has established a rate of freight for the transportation of merchandise from Bakersfield to San Francisco, which is excessive and exorbitant, and oppressive, injurious to the interests of the people, and having a tendency to impoverish the industrious citizens of Kern County, by depriving them of a large portion of their profits and earnings, to which their efforts in their respective business justly entitles them. And for a special cause of complaint alleges that having occasion to ship a large quantity of wool, to wit: a carload from Poso Creek to San Francisco, he was informed the price or charge for such transportation was one hundred and fifty-five dollars for the same, which he considers excessive and exorbitant, and unfair, for this reason, among others, that for the same class of merchandise the charge for transportation from Los Angeles to San Francisco is also one hundred and five dollars, which he regards as very unfair and unjust; the distance from Los Angeles to San Francisco is 188 miles greater than from Poso to San Francisco; and because it is an unjust discrimination in favor of Los Angeles and against Poso, and the inhabitants of Kern County generally. And, therefore, he prays your honorable body will consider this complaint, and will take such measures as will tend to adjust, arrange, and reduce said rates of freight so that they will bear more equally and less oppressively on the complainant and others of his fellow-citizens who are in the same business as himself.

(Signed) M. H. PURCELL.

State of California, County of Kern, ss.

Michael Purcell, being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

(Signed) M. H. PURCELL.

Subscribed and sworn to before me this thirty-first day of August, 1880.

A. C. MAUDE, Notary Public.

COMPLAINT No. 7.

BEFORE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

J. A. Clarke vs. The Southern Pacific Railroad Company.

J. A. Clarke, a resident of Kern County, State of California, and by occupation a farmer, complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, having its principal place of business in the City and County of San Francisco, State aforesaid; and for cause of complaint alleges that said company have fixed, and established, and exact a rate of fares for passengers, and of charges for freight on merchandise passing over their railroad from San Francisco to Bakersfield, and to intermediate and neighboring places, which are exorbitant, extortionate, and oppressive, and that they have a tendency to injure and destroy his own business and that of every other farmer in the county, by depriving him and them of all that portion of the profits of their vocation to which their toil and industry entitle them. And for a special cause of complaint, he alleges that in the latter part of June last he was about to ship from Sumner to Modesto four mules. He was charged for freight on each of said animals the sum of twenty ($20) dollars, hut he refused to pay it, because he considered it excessive. But, on further inquiry, he was informed that he could send a carload for $44; and, this being so much cheaper, he took an entire car and sent them in it. And, on further inquiries, he learned that he could have sent a carload, to wit: sixteen mules, for the same money; and even this was a great deal more than what it would have cost him to have driven his mules to Modesto. That further inquiries developed the fact that he could ship one mule for $20, two mules for $30, three mules for $36, and four mules for $48. He complains of this mode of rating the freight, and these charges, because they are unfair and unjust; and while burdensome and oppressive to himself, exert an unfair and wrongful discrimination towards others in the same business as himself, and for the especial reason that it operates constantly in favor of the rich and against the poor stock raiser or farmer, for it is evident that under such a system the more mules a shipper had the cheaper he could ship them; which is against good policy, and tends to the oppression of the poor and to the impoverishment of the county, for where all do not have an equal chance few can thrive. And first asking the permission of your honorable body, while still maintaining that the above charges are burdensome and oppressive in the extreme, and praying that they be much reduced, he suggests that it should be so arranged and ordered that whenever three or as many as four or more mules are going on the same train, though shipped by as many different persons, each one should be charged only his proportion of the price per carload, say $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, and so on, according to the respective ownership of said mules, and in the same proportion with other animals. And he, therefore, prays your honorable body, that in this manner, or in some other that may seem to your superior wisdom more expedient, to reduce, regulate, and adjust the price of transportation of this and other kinds of animals, so that it will bear less oppressively and more equally on all classes of shippers, the rich and the poor alike.

(Signed) J. A. CLARKE.

State of California, County of Kern, ss.

J. A. Clarke, being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

J. A. CLARKE.

Sworn and subscribed to before me this third day of September, 1880.

A. C. MAUDE, Notary Public.

COMPLAINT No. 8.

BEFORE THE HONORABLE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

A. Weill & Co. vs. The Southern Pacific Railroad Company.

The complainant, A. Weill, of the firm of A. Weill & Co., merchants residing and doing business in the town of Bakersfield, Kern County, State aforesaid, complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, and having its principal place of business in the City and County of San Francisco, and for cause of complaint alleges that the rates of fares for passengers between this point and San Francisco, and between this place and intermediate places, is much too high, being an average price of five (5) cents per mile for each passenger, while on the railroads in the Eastern States, or Atlantic States, it never exceeds three and a half (3½) cents per mile, and on some roads it is as low as two and a half (2½) cents per mile. Wherefore, complainant prays your honorable body to reduce this rate of fare to four (4) cents per mile at least, and establish the rate of charges at so much per mile per head as is the custom on the railroads of the Atlantic States, without respect to situation as to intermediate or terminal points.

(Signed) A. WEILL.

State of California, County of Kern, ss.

A. Weill, being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

Subscribed and sworn to before me, this ——— day of ———, A. D. 1880.

COMPLAINT No. 9.

BEFORE THE HONORABLE BOARD OF RAILROAD COMMISSIONERS.

R. M. Holtby vs. The Southern Pacific Railroad Company.

R. M. Holtby, a resident of Kern County, by occupation a stock raiser, complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, having its principal place of business in the City and County of San Francisco, and for cause of complaint alleges that he is in the habit of shipping stock, more especially sheep, to San Francisco, and by the said Southern Pacific Railroad, by the carload, and though he has repeatedly asked the company owning said road, through its authorized agent at Sumner, to have two floors put into each car, so as to accommodate more sheep, as he believes is the practice on other railroads, at the same price per car, the railroad company has as repeatedly refused, and still refuses, and will not allow more than one floor to be used, or to be placed in said car; and yet they charge for this one floor car the same price that they should

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for the two floors; and he therefore prays that your honorable body will order and direct said company to provide two floors in such cars as are used in shipping sheep, and also as is done on other roads, and charge the same price per carload; and that your honorable body will give such further relief as may seem just and proper in the premises.

State of California, County of Kern, ss.

R. M. Holtby, being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

(Signed) R. M. HOLTBY.

Subscribed and sworn to before me this ninth day of September, A. D. 1880.

I. W. TRUMAN, Notary Public.

COMPLAINT No. 10.

BEFORE THE HONORABLE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

Geo. C. Doherty vs. The Southern Pacific Railroad Company.

Geo. C. Doherty, a resident of Kern County, State aforesaid, and a bee rancher by occupation, complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, and having its principal place of business in the City and County of San Francisco, and for cause of complaint alleges that said company has fixed, established, and exacts a price or rate of freight upon the transportation of merchandise between here and San Francisco which is exorbitant, excessive, and oppressive, and tending to injure or destroy nearly every industry in the county. And, for a special cause of complaint, alleges that as a producer of comb and extracted honey, the pursuit and development of which industry promises to become one of importance in this county, and that being entirely dependent on San Francisco and foreign export trade for a wholesale market, and that the said company's freight rate on this class of produce reduce the profits to that extent that it will not admit of its further production; that all honey frames, shipping cases, etc., for comb honey, and tins, barrels, etc., for extracted honey, are brought from San Francisco, thus paying freight both ways, rate $1 20 per hundred pounds, on all packages and frames, said frames being detached and packed in compact form. That the present rate on comb honey, $1 20 per 100 pounds gross, would incur a freight expense of over $2 per 100 pounds net, while the present rate on extracted honey, 55 cents per 100 pounds, including freight both ways on cases and tins, amounts to $1 per 100 pounds net. That this shipping expense is nearly three times as much as on other roads for the same class of produce. Wherefore, he prays your honorable body will consider this complaint, and will take such measures as will tend to adjust, average, and reduce said rates of freight so that they will bear less oppressively on this complainant, and on other of his fellow citizens who follow the same business in this county.

(Signed) GEO. C. DOHERTY.

State of California, County of Kern, ss.

Geo. C. Doherty, being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

(Signed) GEO. C. DOHERTY.

Subscribed and sworn to before me this eighth day of September, 1880.

A. C. MAUDE, Notary Public.

COMPLAINT No. 11.

BEFORE THE BOARD OF RAILROAD COMMISSIONERS IN AND FOR THE STATE OF CALIFORNIA.

A. S. Hoffman vs. The Southern Pacific Railroad Company.

And now comes before your honorable body, A. S. Hoffman, a resident of the town of Bakersfield, Kern County, State of California, and doing business as a wholesale liquor and cigar dealer, and complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, and having its principal place of business in the City and County of San Francisco, and for cause of complaint alleges that the said company has fixed and established and exacts rate of freights upon such merchandise as he requires in his business, to wit, wines, liquors, and cigars, that is extortionate, exorbitant, and oppressive, and he is informed and believes that it has made and is making unfair and unjust discrimination in favor of names, persons, and places, and against Bakersfield and its business men, by which he, in common with them, are injured and damaged by being thereby deprived of a large portion of the earnings and profits which he should rightfully derive from his business; and for a special cause of complaint, he alleges that in the month of March, 1880, he received at Sumner, from the agent of the said Southern Pacific Railroad Company, in one instance, on March 23, 1880, two (2) barrels and two (2) half barrels of whisky, which were shipped to him from Covington, Kentucky, for the freight on which was charged, and he paid from Covington to Sacramento, the sum of thirty-six dollars and thirty cents ($36 30), being for a distance of about 2,000 miles, while from Sacramento to Bakersfield, a distance of about 300 miles, he was charged and paid $16 31, which he deems and so declares to be greatly disproportionate, unjust, and unfair. And in another instance, on the twentieth of March, 1880, he received from said agent at Sumner one barrel of whisky and one half barrel of whisky, which was shipped to him from Chicago, Illinois, on which he was charged for freight on the same from Chicago to Stockton, a distance of about 2,000 miles, the sum of $16, and from Stockton to Bakersfield, a distance of about 300 miles, say one sixteenth this distance, he was charged $7 59, which he deems to be and so declares in comparison entirely disproportionate and a great injustice on the part of the Southern Pacific Railroad Company. And he prays your honorable body to examine into and adjust the rates of freight of said Southern Pacific Railroad Company so that they shall not be so unfair and unjust and onerous on your complainant and his fellow sufferers.

(Signed) AUG. S. HOFFMAN.

State of California, County of Kern, ss.

A. S. Hoffman, being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

Subscribed and sworn to before me this second day of September, 1881.

A. C. MAUDE, Notary Public.

COMPLAINT No. 12.

TO THE HONORABLE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

State of California, County of Fresno, ss.

The undersigned, Frank Dusy, a resident of Fresno County, aforesaid, respectfully represents to your honorable body that he has been a resident of said county for the past sixteen years, and that for the past eight years he has been and still is engaged largely in the business of raising sheep, and selling sheep and wool in the San Francisco market. That in order to compete with other dealers in the same market it is necessary for the wool growers of Fresno County to send their products to San Francisco on the freight trains of the Central Pacific Railroad Company, Visalia Division. That the charges of said company for a carload of sheep from Fresno to San Francisco are fifty-four dollars. That an ordinary carload of full grown sheep numbers about 90 head, of an average weight of 100 pounds per head, or 9,000 pounds in the aggregate, or 500 pounds less than half the weight of a carload. The undersigned is informed and believes that it is entirely practicable for said railroad company, at trifling expense, to construct in each stock car used for the transportation of sheep a movable platform, or deck, at half of the inside height of the car, on which can be carried with perfect safety and convenience an additional 90 head of sheep, thus doubling the present loads, but not increasing the entire weight to over 9 tons. If such plan shall be adopted by the company there will be no objection to the charge of fifty-four dollars per carload. But if such plan is not adopted, the undersigned respectfully submits that the present rate of charges is twice as great as it should be, and prays that such steps may be taken, and such order made by your honorable body in the premises as shall regulate such charges of the railroad company, and render them just, fair, and equitable to all parties concerned. The undersigned further respectfully represents that the charges of said company upon wool shipped from said town of Fresno to San Francisco are $100 per carload, and that such carloads of wool do not average over 18,000 pounds, or 9 tons each. That said company charges for a carload of wheat of 10 tons, sent over the same route, only ——— dollars. The reason and justice of so great a discrimination against the article of wool is not apparent to your petitioner, and he, therefore, respectfully prays that you will make such orders in the premises as will place the freight tariff of said company, so far at least as it affects the article of wool, on a basis of justice and equity.

Your petitioner further respectfully represents that at the Fresno ticket office of said com-

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pany no tickets are permitted to be sold, and no tickets can be bought except first class tickets. And that where circumstances make it necessary for a passenger to accept a second class or third class fare, they have not the corresponding privilege of buying a second class or third class, but are compelled, in all cases, to buy and pay for first class tickets. That the evident and inevitable result is that the passenger from Fresno pays for his trip to San Francisco a much larger amount than many of his fellow travelers over the same distance. He, therefore, respectfully asks such action on the part of your honorable body as will eventuate in the abolishment of the odious and unjust system that now exists and controls the rates of fares and freights to and from the town of Fresno. Your petitioner further represents that on or about the twenty-third day of July, 1880, he shipped on the freight cars of the said railroad company, at Niles' Station, in Alameda County, California, thirty-four bucks, to be brought to Fresno. That the freight charges on said bucks—he being in personal charge of them, and assuming all risk of personal injury—was $38 40, of which he does not complain. Said freight train, with said bucks on board, then ran from said Niles' Station into the City of Oakland, in said Alameda County, and thence to Fresno, making a trip of about 222 miles. When said freight train and bucks reached Fresno, he desired to have said bucks transported to Fowler's Station, nine and a half miles south of Fresno, and they were neither taken out of said cars nor was said car unhooked from said train, but continued in its former relative position. But your petitioner was, at Fresno, compelled to make a new contract with said company for carrying said bucks to Fowler's Station, and to pay them the further sum of $5, which sum was afterwards increased to $7, by order of C. J. Wilder, an officer of said company; and such additional charge was paid by your petitioner, thus making a charge of $7 for carrying a carload nine and a half miles, which had just been transported 222 miles for $38 40. Your petitioner further represents that he is charged and compelled by said company to pay them $10 per carload of wool (of 18,000 pounds), from said Fowler's Station to said town of Fresno. Your petitioner, therefore, in conclusion, respectfully asks that your honorable body will give to the foregoing statements such attention and examination as may be necessary and proper, and that you will take such action in the premises as is necessary to establish justice and enforce equity as between said railroad company and those who are compelled to travel or send freight over its routes.

(Signed) FRANK DUSY.

FRESNO, September 8, 1880.

Subscribed and sworn to before me, on the eighth day of September, 1880, at Fresno, California.

(Signed) C. J. BEERSTECHER,
Railroad Commissioner, Second District.

COMPLAINT No. 13.

FORE THE HONORABLE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

J. D. Stockton vs. The Southern Pacific Railroad Company.

J. D. Stockton, a resident of Kern County, and a farmer by occupation, complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, and having its principal place of business in the City and County of San Francisco, and for cause of complaint alleges that the said company has fixed and established, and exacts a price or rate of freight upon the transportation of merchandise and produce, between this place and San Francisco, which is exorbitant, oppressive, and excessive, and tending to injure and destroy nearly every industry in the county; and for a special cause of complaint alleges and declares that he applied to the company's agent at Sumner for an empty freight car, and was asked by said agent what kind of freight he intended to ship; on being told that it was alfalfa seed, he was informed that the cost would be $180 per carload, whereas for wheat the company demanded only $60 per carload. That at that exorbitant rate of freight he would lose his ratio of aggregate $246 on a carload of alfalfa seed, not saying anything about the cost of land, clearing, sowing, and caring for the same, to wit: mowing, $1 per acre; hauling and stacking, $3 per acre, with four men to clear the swath; thrashing, $70 per day (averaging 3,000 pounds); three men recleaning the same, $8 per day; sacking and hauling, half cent per pound; the yield per acre being 100 pounds merchantable seed; or in other words, the cost would be as follows:

Cutting	$200 00
Hauling, including the time of men to keep the grain out of the way of the horses, $3 an acre	600 00
Thrashing	666 00
Sacking and hauling	100 00
Cost of car	180 00
Total	$1,746 00
10 tons, at $150 per ton	1,500 00
My ratio of loss to the aggregate	$246 00

Wherefore, he prays your honorable body will consider this complaint, and will take such measures as will tend to adjust, arrange, and reduce said rates of freight so that they will bear more equally and less oppressively on the complainant and others of his fellow citizens who are in the farming business in this county.

State of California, County of Kern, ss.

J. D. Stockton, being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his knowledge, except as to matters therein contained on information and belief, and as to those matters he believes it to be true.

(Signed) J. D. STOCKTON.

Sworn to and subscribed before me this seventh day of September, 1880.

A. T. LEIGHTON, County Clerk.

COMPLAINT No. 14.

BEFORE THE HONORABLE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

P. Galtes vs. The Southern Pacific Railroad Company.

This complainant, P. Galtes, a merchant doing business in the town of Bakersfield, Kern County, State aforesaid, complains of the Southern Pacific Railroad Company, a corporation duly incorporated under the laws of the State of California, having its principal place of business in the City and County of San Francisco, and for cause of complaint alleges that the rate of freight on merchandise from San Francisco to this place, being at the rate of $1 20, $1 80, and $2 35½ per 100 pounds, is entirely too high. That he ought to pay for freight and fares as low rates as on any other railroad of the United States, or at least to obtain the lowest rates established in our own State; for instance, from San Francisco to Arizona, in proportion, and that the company should charge so much per mile both for freights and fares. That the public should not be charged ten cents for State toll for every small bill of goods, but charged only at the rate of ten cents per ton. That some time in May the complainant had in San Francisco the shelvings and counters of his new brick store, whose weight would not quite load two flat cars. He proposed to the company to take two flat cars and to load them with that one class of goods, but the company would not admit of such a proposition, and they charged him the highest rate per 100 pounds, to wit: $2 62½ per 100 pounds. That he had about one and three quarter carloads, and that it cost him $492, and that if he is not mistaken, a flat car then cost from $60 to $80. That such abuses ought to be abolished. That the company ought not to charge for goods shipped in bales $180, when the same being in cases are $120, such as overalls, blankets, etc. He claims that if a merchant or farmer has miscellaneous goods (not dangerous), to ship, he should be allowed to load a car by paying carload rates as established. Wherefore, he prays your honorable body will consider this complaint, and will take such measures as will tend to adjust, arrange, and reduce such rates so that they will bear more equally and less oppressively on the complainant and the community at large.

(Signed) PAUL GALTES.

State of California, County of Kern, ss.

Paul Galtes, being duly sworn, says that he is the plaintiff in the above entitled action; that he has heard read the foregoing complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters therein stated on information and belief, and as to those matters he believes it to be true.

Subscribed and sworn to before me this —— day of —— A. D. 1880.

A. C. MAUDE, Notary Public.

CENTRAL PACIFIC RAILROAD COMPANY, GENERAL SUPERINTENDENT'S OFFICE,
SAN FRANCISCO, December 8, 1880.

To the honorable Board of Railroad Commissioners:

GENTLEMEN: On receipt of complaints filed with your honorable Board, I at once took the matter up with our General Freight Agent, and asked him to investigate carefully and report to me on all matters pertaining to complaints relative to the affairs of his department, and his reply is so complete and exhaustive that I deem it well to submit it herewith without comment.

In reply to complaints made by various parties concerning exorbitant rates of fare, and especially those made by W. H. Scribner and A. Weill, both of Bakersfield, claiming that passenger

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rates on the Southern Pacific Railroad are too high, and making comparison with rates prevailing elsewhere, I would say that the nature of the complaints being nearly identical, I will deal with that more especially of Mr. Weill.

He alleges that the rates of fare for passengers between Sumner and San Francisco, and between Sumner and intermediate points, is much too high, being an average price of five cents per mile for each passenger, while the rates in the Eastern and Atlantic States never exceed three and one half cents per mile, etc., and prays your honorable body to reduce the rate of fare to four cents per mile, etc.

If it be a fact that the rates in the Eastern and Atlantic States never exceed three and one half cents per mile, it is no reason why the rates in California should not exceed four cents per mile. Such a comparison is of very slight value, as the rate of fare varies upon different roads, and must vary greatly according to the nature of the country through which it runs. Some roads are located through manufacturing centers—thickly settled sections of the country—on which the amount of traffic ranges all the way from 15 to 2,500 per cent greater than on another class of roads built through grazing and agricultural sections of the State, or other States. Thus, you see the rates are governed by the volume of business and cost of operating. Take, if you please, Massachusetts, which has 238 people to the square mile, and 994 people to one mile of railroad, while California has but four people to the square mile, and 371 people to a mile of railroad.

Since the gentleman draws the comparison, however, between the roads of California and those of other sections, it is perhaps proper I should mention the fact that the number of passenger trains running between Sumner and San Francisco, 314 miles, is one a day each way, with a very light passenger business, the rate for a round trip ticket being $27, or $4\frac{3}{10}$ cents per mile; while the distance from New York to Washington, for illustration, is 230 miles, fare $7 50, or at a rate per mile of $3\frac{3}{10}$ cents; New York to Baltimore, 188 miles, $6 20, or $3\frac{3}{10}$ cents per mile; New York to Hartford, 110 miles, $3 75, or $3\frac{4}{10}$ cents per mile. There are run, per time table, between New York and Philadelphia, over which line this Washington business goes, 56 passenger trains per day; between Philadelphia and Baltimore, 14; Baltimore and Washington, 48; and between New York and Hartford, 20. All these trains have many cars filled with passengers.

The inequality alone in the volume of traffic would seem to fully justify the rates now in force upon the Central Pacific Railway.

Still another illustration: Between London and Paris, distance 283 miles, a single trip ticket, first class, is $15, or $5\frac{3}{10}$ cents per mile; round trip ticket, first class, is $23 75, or $4\frac{2}{10}$ cents per mile. The distance from San Francisco to Sumner is 314 miles; first class single fare is $17, or $5\frac{4}{10}$ cents per mile; round trip ticket (as already stated) is $27, or $4\frac{3}{10}$ cents per mile. Thus it will be seen that the rate between the two largest cities of Europe, between which there is an immense through as well as local traffic constantly passing, where labor and all railroad supplies are far below what they are in California, the charge is but one tenth of a cent per mile less than that of the Central Pacific Railroad Company, over which the business passing is but a mere trifle when compared to that enjoyed by the great lines between London and Paris. I may also add that the passengers are allowed but 56 pounds of baggage there, while the Central Pacific allows 100 pounds to every passenger free.

I know how easy a matter it is for people to complain who are expected to pay for what they have or enjoy, whether it be for the necessaries of life, for luxuries, or for railroad service. And, indeed, it is really surprising to me that your honorable Board has received so few complaints from the people of the many places you have visited.

Those of a specific character we have endeavored to answer in a way we believe will prove satisfactory to your honorable Board—making corrections of errors and misstatements made by some of the complainants. Those complaints of a general character are more difficult to meet, except by a general denial, and the broad and open declaration that the rates in California are lower in proportion to the amount of traffic, cost of labor, number of inhabitants to the mile of road, or to the settlement of the territory, than in any other State or Territory in this or any other country in the world that we have any knowledge of.

In conclusion, I will say, that a diversity of opinion exists as to what is a fair charge to be paid for certain services performed by the railroads of the country, and it seems to me no one can have a better knowledge of this than those who are most competent to judge of the carrying capacity of a road, and the amount of disbursement absolutely necessary to meet its obligations, and to operate and keep the property up to the highest standard of excellence, which is as essential to the patrons as its owners.

I am, very respectfully, yours,

(Signed) A. N. TOWNE,
General Superintendent.

CENTRAL PACIFIC RAILROAD COMPANY, GENERAL FREIGHT AGENT'S OFFICE,
SAN FRANCISCO, December 8, 1880.

A. N. Towne, Esq., General Superintendent Central Pacific Railroad, San Francisco:

DEAR SIR: I beg to own receipt of your letter of the 2d instant, covering copies of eleven (11) complaints filed with the Board of Railroad Commissioners during its several tours through the

State, and instructing me to carefully examine same, and report fully upon the facts and circumstances connected with each case.

The complaints referred to are as follows: No. 1, by E. P. Wheeler, merchant, Bakersfield; No. 2, by Richard Hudnutt, farmer, Bakersfield; No. 4, by M. Hirshfield, through H. Hirshfield, merchant, Bakersfield; No. 6, by Michael Purcell, sheep raiser, Kern County; No. 7, by J. A. Clarke, farmer, Kern County; No. 9, by R. M. Holtby, stock raiser, Kern County; No. 10, by George C. Doherty, bee raiser, Kern County; No. 11, by A. S. Hoffman, liquor dealer, Bakersfield; No. 12, by Frank Dusy, wool grower, Fresno County; No. 13, by J. D. Stockton, farmer, Kern County; No. 14, by P. Galtes, merchant, Bakersfield.

With but few exceptions, they uniformly state that the rates of freight charged by this company are excessive, the language of some being that the charges are such as to deprive them, the complaining parties, of the large portion of the profits to which they are justly entitled, and that they tend to destroy every industry of Kern County and prohibit production. In nearly every case the tariff of this company is measured by the information and belief of complainants concerning the tariffs of the railroads in the Eastern States. The general statements are nearly all accompanied by examples of special causes of complaint. By noticing these I think the whole ground will be covered.

COMPLAINT No. 1,

States that the freight rate for general merchandise between San Francisco and Bakersfield (Sumner) to be, for first class, $2 35½, second class, $1 80, third class, $1 20 per 100 pounds, and that those rates are unfair and unjust, by comparison with those charged on eastern railroads for like distance. As examples of the charges on eastern railroads, the following are given: Atlantic and Great Western Railway, first class, 63 cents, second class, 47 cents, third class, 37 cents per 100 pounds. Chesapeake and Ohio Railroad, first class, 81 cents, second class, 73 cents, third class, 58 cents per 100 pounds. These rates—that is, the rates of either or both of above roads—are deemed reasonable, and such as merchants might live under. The extent of the inquiry and investigation made by the first party to this complaint, is shown by the fact that at the start he misrepresents the rates charged by this company. Instead of being $2 35½, $1 80, and $1 20 per 100 pounds, on first, second, and third classes, respectively, between San Francisco and Sumner, they are but $1 20, $1 07, and $1 01, per 100 pounds, respectively.

His information and belief concerning the charges of the eastern roads, whose rates he professes to give, may be no better than they are above shown to be concerning the charges of this company. Therefore his statements are not entitled to credence, however honest his motives may be. But, assuming that he gives the correct rates of the eastern roads referred to, he admits that the rate of either or both "are quite reasonable, and under them a merchant might be able to live." Yet there is a difference between the schedules for like distances, of 21 per cent, 35 per cent, and 36 per cent, for first, second, and third classes, respectively. He, therefore, must regard it wholly reasonable for one railroad company to charge more than another for a haul of the same length, and that it is possible for merchants on these different roads to live.

I call attention to this point simply to illustrate what is known by all intelligent men who have given the subject of transportation any attention, namely, that the rates of railroad companies are and must be governed by circumstances, such as the conditions of trade, the character of the road, and nature and extent of competition, the volume, kind, and distribution of the traffic, the cost of labor, fuel, supplies, etc. Now, then, if the party to this complaint can, from a disinterested standpoint, justify a difference of from 21 per cent to 36 per cent between the charges for a similar service of the Atlantic and Great Western Railway and those of the Chesapeake and Ohio Railroad, it certainly is not unreasonable to suppose that, were he standing in the same relation to this company, he could as easily justify a difference of from 32 per cent to 42 per cent (which is all there is) between the charges of this company and those of the Chesapeake and Ohio Railroad Company for a similar service. The eastern roads referred to run through the thickly peopled States of Pennsylvania, Ohio, Indiana, and Virginia. They carry a thousand tons of freight and a thousand passengers to one carried by the line on which Sumner is located. The products, manufactures, and supplies of over forty millions of people are more or less tributary to their lines, which, as a rule, are taxed to their maximum capacity. The roads of *this* company have but a limited traffic. The products and supplies of less than a million people are tributary to them, and the ordinary capacity of their single track is from five to twenty times greater than their traffic. Under these circumstances a comparison of the charges of this company with those of the railroads in the Atlantic States, which does not include all the elements bearing upon the question and necessary to an intelligent judgment upon it, is not a fair comparison, and certainly will not aid the Board of Railroad Commissioners to an intelligent determination of the questions brought before it. What has been said above is equally applicable to all the complaints before me of excessive charges. The sole ground for each complaint is the alleged information and belief of complainants regarding the relative charges of Eastern roads.

COMPLAINT No. 2,

"Charges that the freight rates between San Francisco and Bakersfield are per carload as follows: First class, $1 20, second class, $1 09, third class, $1 01 per 100 pounds, and that even these rates are much less than what are actually collected, because infinite subdivisions of each class of freight are made, and the railroad agents will not take freight at the rates

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above quoted unless it is entirely of one kind of goods, which can rarely occur; and that hence the rates paid are almost invariably those charged on lesser quantities, averaging fifty per cent more than the aforesaid carload rates, namely: $2 35½, $1 50, and $1 20 per 100 pounds, respectively.

It is very difficult to get at what this party means by the language of the complaint. But I notice that the rates first above quoted under this head are stated as "carload rates;" that is, it is alleged that the rates of $1 20, $1 09, and $1 01 per 100 pounds, respectively, apply *only when straight carloads of goods are shipped*. This is a mistake, so far as first class rate of $1 20 per 100 pounds is concerned. That is the rate per 100 pounds on all ordinary merchandise, regardless of the quantity shipped, whether great or small. It is, therefore, not true that the charges are invariably 50 per cent more than $1 20 per 100 pounds.

The rate of $2 35½ is the maximum rate charged upon anything. It is applied only upon such articles as bandboxes, baskets, batting, bird cages, boats, empty churns, empty barrels and casks, fruit boxes and trays, feathers, fireworks, etc.—articles that are extremely bulky, displacing from four to ten times the space occupied by the same weight of ordinary merchandise; or articles which are extremely hazardous, such as coal oil or gunpowder, in small quantities, liable to injure the train, damage the cars, or damage other freight when loaded in the same car, or which require special cars or special attention in order to handle, etc. These articles number, as you well know, scarcely one hundred out of the multitudes of articles of human production and consumption which makes the sum of traffic of a railroad company. Their amount is infinitessimal in proportion to the tonnage of the road, not equaling, I venture to assert, one hundredth of one per cent of the whole. If they were all taken at first class rates, the reduced rates could have no appreciable influence upon the prosperity of any community or individual. The same is true of the articles which are taken at the lower rate of $1 80 per 100 pounds, being such as are rated in the railroad parlance at one and one half times first class. They are so rated for reasons similar to those given in the explanation of the maximum rates. The list contains such articles as thrashers, steam boilers, brooms, children's cabs and wagons knocked down, china baskets, copper vessels, unless they are nested and packed, drygoods, when packed in bales, which, by being so packed, are extremely susceptible of damage by chafing or leaking of liquids in the same car, some kinds of empty packages, hats and caps, shrubbery in bundles, and drain tiling in less than carloads. I think that one twentieth of one per cent would be a very liberal estimate of the relation they would bear to the whole tonnage. Respecting these rates, if there is taken into consideration the displacement of space, the liability of damage to the article itself or its liability to damage other articles loaded near it, its value, and the risk in handling it, and all the other elements proper to be considered in rating freight, they will be found to be the lowest charged by this or any other railroad company.

The legal restriction of 15 cents per ton per mile makes it impossible for the railroad company to fix a fair charge for the transportation of some of the articles included in the class above referred to.

This complaint also states that the charges between San Francisco and Los Angeles are but 10 cents, 6 cents, and 7 cents per 100 pounds on first, second, and third classes, respectively, greater than the charges from San Francisco to Sumner. The statement is partially incorrect, as the real difference is 10 cents, 8 cents, and 7 cents, respectively. The smallness of the difference is adduced as evidence of unjust discrimination in favor of Los Angeles and against the citizens of Kern County. I am unable to view the matter in the same light, and I think it will be difficult to justify the views of the gentleman making the charge before any thoughtful or unprejudiced Judge or jury.

Before the Southern Pacific Railroad was built, Kern County was dependent upon wagons and stages for its means of transportation, at a cost of which the tariffs of the railroad company are but a fraction. Its lands were chiefly devoted to grazing. At the same time Los Angeles County was served by sailing craft and regular lines of steamships, at rates which, it is reported, were seldom greater than the same class of carriers now charge. The interests of the county were diverse—fruits, cereals, cattle, and sheep were abundantly produced, and the chief city of the county was the center of trade for the southern portion of the State. That which this complaint terms discrimination, *i. e.*, the difference in the cost of transportation to and from Kern and Los Angeles Counties, respectively, certainly subsisted at that time. Did the railroad company create it? Did it increase it? How is it with Kern County now? The railroad has been built, cost of transportation of supplies has been largely reduced, land has not only trebled and quadrupled in value, but values have been created where none before existed. Agriculture has not only become possible, but profitable, for the people have secured the "open sesame" to all the world's markets, and this, too, without a dollar's expense to a citizen of the county. How is it with Los Angeles County? It has received the same railroad facilities, in addition to its other natural advantages, but has been deprived of the same relative benefits (the cheapening of the cost of marketing its produce and receiving its supplies) by law. Here is a discrimination, indeed. The railroad company is allowed to decrease the cost of freight for the Kern County citizens, but restrained, by law, from doing the same thing for the citizens of Los Angeles County. The hardship is twofold, but does not affect, except indirectly or remotely, a single citizen of or interest in Kern County; but it does affect the railroad company by compelling it to forego a large portion of the traffic interchanged by Los Angeles County and the City of San Francisco, which it might engage in at a very little additional expense. And it affects the citizen of Los Angeles County by depriving him of the benefits of competition which the natural advantages of location, near the sea, would promote, were its transportation interests left to the control of commerce and trade.

The railroad company maintains that its rates between San Francisco and Sumner are reasonable, and I think you will agree with me, that neither this complaint nor any of its fellows advocates anything worthy of evidence or argument to the contrary. There is not only utter barrenness of facts or logic in the complaint, illustrations of the alleged unfairness and injustice of carrying freight between San Francisco and Los Angeles for the slight advance over the rates between San Francisco and Sumner, but I dare assert that the knowledge and experience of the author of each and every complaint before me, is equally barren of an example wherein his or his neighbor's interest has been injured or retarded by the practice. Again, according to this complaint, the rate of $5 50 per ton charged from Sumner to San Francisco for wheat, "leaves the producer no adequate margin of profit to encourage its production."

The Kern County farmer can deliver his wheat at ship's side for $5 per ton. For years wheat has been and is now being produced in this State and marketed in Europe which has cost the producer $6 per ton to deliver at ship's tackle in San Francisco harbor, and the wheat production has and is steadily increasing. I have known it to be produced even in Arizona and Utah and marketed in San Francisco at rates considerably above those complained of. The very fact that California produces, and markets in Europe, against the local producer, from 600,000 to 1,000,000 tons of wheat annually, is sufficient answer to this specification.

COMPLAINT No. 4,

Is that the freight on potatoes from Tulare to Sumner is so high that the shipper cannot make a living profit on his goods. Potatoes are rated by this company with wheat, for which a very low rate is provided when going to the general market, but when moved short distances, or in the other direction, *i. e.*, away from the general markets, it is rated second class. Now, while I don't attach much importance to the statement in estimating the relative fairness or reasonableness of the rates, yet just to show how the arguments of these complaining gentlemen may be turned against themselves, I beg to state that the tariffs of the Illinois railroads, governed by the laws of that State, provide a higher rate for second class freight moved like distances. For example: for sixty miles the second class rate of the Chicago and Burlington and Quincy Railroad is 34 cents per 100 pounds; that of the Chicago and Alton Railroad is 37½ cents per 100 pounds; while this company's second class rate, Tulare to Sumner, 63 miles, is but 31½ cents per 100 pounds. I am unable to discover any evidence of extortion upon the part of this company by that comparison, which is certainly the very method chosen by the complaining parties whereby to test the traffic of the Central Pacific Railroad Company. But this complainant says that, on account of the charges of this company, he cannot make a living profit on his goods, and the same assertion runs monotonously through all the complaints. Respecting it, I beg to submit that, to entitle such a complainant to the patient hearing of the honorable Board of Railroad Commissioners, it ought to be accompanied by evidence of what is or may be considered a "*living profit*," and proof that such a profit was not secured from the transactions or transaction referred to, and that the failure to gain it was or is wholly chargeable to the fact that transportation charges were more than a certain sum conceded by all to be reasonable. As the general complaint under notice consists of mere unsupported assertions, I venture to meet it with an assertion which I think you will indorse, and that will commend itself to any reflecting man who will consider it for a moment, namely: that if a just estimate be taken of the expenditure of brain power, physical labor, skill, capital, experience, and the risk involved in the transaction, in fact everything which contributes to the value of a service, it will be conceded that the service of the carrier in hauling the car of potatoes—Tulare to Sumner—is by far the cheapest rendered by anybody, from the producer to the merchant who distributes to the consumer. And the percentage of profit upon the investment of capital, skill, and labor, made in the transaction referred to by the merchant who makes this complaint, was very many times that realized by the carrier, and this is equally true of every case in the complaints before me.

I venture to say further, that proper inquiry will reveal the fact that the merchants and dealers of the town of Bakersfield, as a rule, make a larger percentage of profit than those of the same class doing business in less remote districts, or at points served by competing carriers, which enjoy lower rates of freight. It is idle to say that the merchant's profits depend in any degree upon the freight rates. If dependent at all, it is upon this rule only: that the higher the freight rates, the greater the profit of the merchant.

COMPLAINT No. 6,

Alleges, as a special cause for complaint, that the rate on wool from Poso is or was one hundred and fifty-five ($155) dollars per carload; that this rate is exorbitant and unfair; because the rate is no greater from Los Angeles to San Francisco, although Los Angeles is one hundred and eighty-eight (188) miles further off. The fact is, the rate on wool from Poso to San Francisco is but sixty (60) cents per 100 pounds, no matter what quantity is shipped. The rate per ton would, therefore, depend altogether upon the quantity loaded to the car. If that should be 20,000 pounds, which is considered the minimum capacity of the car, the carload rate would be but one hundred and twenty ($120) dollars. The ground of the complaint in this case is evidently the view of its author, that the relative rates from Poso and Los Angeles should be in proportion to the length of each haul, and because it is not so terms "it an unjust discrimination *in favor of Los Angeles and against the inhabitants* of Poso and Kern County." In noticing Complaint No. 2, I have covered this point of unjust discrimination, but wish here to ask, in what

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way is any wool grower of Kern County injured, or how are his material interests affected in the least by the fact that the citizen of Los Angeles County can forward his wool to the general market at no greater cost? There is no competition between the counties in this product. Neither one produces more than the other, or a better quality than the other, and does not affect the price secured. The wool is all marketed in the Atlantic States. The demand is more than all California can supply, and the price is governed, not by the size of the clip in this State, but by prices in London, and the relation of the supply to the demand from all sources. What the author of this complaint desires is, that rates from Poso and Kern County shall be the same *per mile* as from Los Angeles.

Another of the complainants goes further—urges that the rates to Sumner should be the same proportionately—that is, in proportion to distance as to Arizona—and the same principle, that rates should be uniform for all distances, would require rates to and from Sumner or Poso to be the same per mile as to and from New York and San Francisco. These gentlemen seem to be utterly oblivious to the common principle of trade, that a large bnsiness can be handled at a lower rate per mile of service than a small one. As a man can and will work for less per day under contract guaranteeing him constant employment for a long term than he can or will if employed by the day, or as a farmer can cultivate a section of land at a less cost per acre than he can twenty acres, or as a merchant can afford to sell a million dollars worth of goods per annum at a lower percentage of profit than he can if he but handled fifty thousand dollars worth of goods; so a railroad company, having *miles of transportation service to sell*, can sell a thousand miles at a lower rate per mile than three hundred. Again, competition of markets and of other carriers as factors in transportation seem to have been entirely ignored. This company and its eastern connections are now, and have been for more than a year, carrying barley to Chicago for twenty dollars ($20) per ton, which is less than one cent per ton per mile. To charge a higher rate would absolutely exclude the California barley from competition with that grown in the Eastern States and Canadas. By taking it, the railroads increase their expense but a trifle over and above the cost of operating them without this tonnage, and they open a market for a California product which could not be placed at any other point.

Now, are not both the public of California directly, and this company indirectly—by the promotion of home industries, if not directly—benefited by this extremely low rate? What would be the result if any competent power required rates to intermediate points to be the same per mile? Nothing less than the abandonment of the Chicago business, *i. e.*, the rates, too, would have to be advanced, so as to exclude California grain from that market, and the producer of California would be the sufferer. The effect would be the same in a case of competition between carriers. Take, for example, the business between Los Angeles and San Francisco. The desire of the complainants can be accomplished in two ways only, namely: by advancing rates to and from Los Angeles to the same rate per mile as the rates between San Francisco and Sumner or Poso, or by reducing the latter to the scale of the former. If the first plan were adopted, Los Angeles would ship her wool by sea, which, while damaging the railroad and making it much more difficult for its managers to reduce rates to intermediate points, would not benefit Kern County. In fact it would injure it, by postponing the day when the tariff upon its products could fairly be modified, or even, perhaps, necessitate an advance in its freights, in order to continue profitable operation of the road.

The effect of the railroad regulation in the new Constitution has been precisely as described above. The railroad company was compelled to advance the Los Angeles rates on all general merchandise, and has consequently lost the traffic. The suggestions of these complaints would force to the sea all the trade of that section that is left to the railroad. Were the second plan adopted, it would have to be by some such regulation as this:

First—The railroad company must make rates to competing points as low as other carriers.

Second—The rates to points intermediate must not be greater per mile than to the competing point.

This I am sure you will excuse me from commenting upon, especially as the State, or its officers the honorable Commissioners, has and can exercise no authority over all the competitors of this company. The railroad company simply could not and would not be operated.

COMPLAINT No. 7,

Alleges, for special cause of complaint, that upon offering four mules for shipment, Sumner to Modesto, the complainant was told that the rate would be $20 each, or $80 for the four. Upon further inquiry he learned he could ship one mule for $20, two for $30, three for $36, four for $48, and a carload for $44. Complainant avers that this method of rating discriminates against the poor, in favor of the rich man. The rates from Sumner to Modesto on horses, mules, and cattle, are for one head $19 80, two $33 65, three $44, and a carload $44. In no case is there a greater charge made for a lesser than for a greater quantity in the same car. The rates for carloads are fixed with reference to cattle and sheep, though they are applied on horses and mules as well. The carload rates might fairly be greater, but cannot be made so without driving business from the road. The rate for a single head is the same as that for a ton of freight, for two head the same as for a ton and three quarters of ordinary freight, for three head the same as for two and one half tons of ordinary freight, and for every additional head the same as for one half a ton of freight, except it is stipulated that in no case shall the charge for less than a carload be greater than for a full carload. You are well aware that while the charge for a single head may seen out of proportion to the charge for a carload, yet the disproportion disappears with acquaintance for the reasons for the difference. A horse, mule, or cow will certainly

occupy a great deal more space in a car than a ton of freight, and if from four to five are placed in one car they practically occupy the whole car—that is to say, the car is not available for any other freight.

The shipment was made June eighth, and the mules occupied the entire car, so that while the shippers had the privilege of shipping sixteen, at the same cost, and only shipped four, the railroad company performed the same service that they would have performed had the car contained sixteen mules. The complainant suggests that the railroad company be compelled to carry mules, whenever there are four or more in the same train, no matter if consigned to four different persons, and charge no more for each mule than in proportion to the carload rate—that is to say, one sixteenth ($\frac{1}{16}$) of the carload rate for each mule. If such a method of rating mules was reasonable and just, to apply it to the rating of all other animals and freight as well—that is to say, the rate of charge for one sheep should be one ninetieth ($\frac{1}{90}$) of carload rates, for a hog one seventieth ($\frac{1}{70}$) of a carload rate, and for each lot of 100 pounds of freight one twentieth ($\frac{1}{20}$) of the rate per ton. The suggestion is so absurd and impracticable that further comments are unnecessary.

COMPLAINT No. 9,

Complains first, because the railroad company will not furnish cars containing two decks for the transportation of sheep; and second, that the charge for a carload of sheep—that is a single deck car—is as much as it should be for a double deck car. Double decked cars are not furnished, for the following reasons: they would be wholly useless for all kinds of freight, excepting sheep and hogs; and as the business of the company in the transportation of this kind of freight is limited not only in quantity, but to certain seasons of the year, the cars would be idle at least half of the time. If this were not the case, the shipment of live stock is as a rule altogether in one direction—that is towards San Francisco—and as the cars would not be available for any other class of freight, they would have to be sent to a shipping point empty, hence requiring the car to double the road in order to transport one carload of stock to this market. It is, therefore, evident that whatever might be considered a reasonable rate for a carload of sheep in a car, but with one deck, that double that rate would not compensate the railroad company were it required to furnish double deck cars and haul double the number of sheep per car. The rate of single deck cars being from Sumner to San Francisco fifty-three dollars and sixty cents ($53 60), or 20 per cent lower than the same cars would earn if cattle were loaded in it. I think there can be no doubt that it is reasonable.

COMPLAINT No. 10,

Alleges that the present rate of $1 20 on comb honey and 55 cents on extracted honey—the rates named being for 100 pounds—reduce the profits of complainant to an extent that will not admit of its further production.

Regarding this, permit me to state that honey is produced in California, shipped over the railroad of this company, thence shipped by rail across the continent, and marketed in the Eastern States against the honey produced there, and is even exported to and sold in Europe with honey produced in European countries. No other comment seems to be necessary.

COMPLAINT No. 11,

Is specific, and alleges that the rates on wines and liquors from San Francisco to Sumner are exorbitant, because the rates on whisky from Illinois and Kentucky to Sacramento and Stockton are lower per mile than the rates from San Francisco to Sumner. The particular grievance of the complainant is, that those rates deprive him of a large portion of the earnings and profits which he should rightfully derive from his business. The rates on whiskies from the East are very low, and are made so simply because low rates are necessary to compete with vessels following the Cape Horn route, which brings to this port by far the larger proportion of the whisky imported. It is not reasonable to suppose that the entire traffic of this railroad company, or any railroad company, can be done upon the basis of low rates, made necessary for the through business, taken in competition with other carriers, nor that the railroad companies should undertake to place interior towns upon a footing with respect to transportation charges with San Francisco and other places located at competitive points. The ground of this complaint has been covered in previous remarks.

COMPLAINT No. 12,

Is, for the most part, same as No. 9; that is, that double deck cars are not furnished for sheep at Fresno at same rates charged for single decks. It is not necessary to notice this, except that complainant avers that it is practicable to provide a movable upper deck, which would remove the difficulties in the way of providing cars with two fixed decks.

The answer to this is, that the experiment of movable decks has been tried by railroad companies and rejected as a failure, so that railroad companies who have a large stock business so distributed over their line that double decked cars can be furnished with economy, prefer and use fixed decks. Another specification of this complaint is, that the rate for wool from Fresno to San Francisco is $100 per car, while wheat is taken for $48 50, and complainant can see no reason or justice in such wide discrimination.

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With respect to this, it is submitted that the rate on wool is not unreasonable, and that the rate for wheat is very low, and, while the latter is very much lower than the former, that the relation which the two articles bear to the whole tonnage of the State, their relative value and industries upon which the prosperity of the State depends—the cost of production—and the price obtained for them at the general market, are sufficient to justify the difference. Classification of freight is necessary. If it were possible to make an average rate per ton to be charged for all classes of freight, regardless of their value, or weight and measurement, their liability to damage, or to damage other freight, etc., the question of freight tariff would be a very simple one. Carriers would be very eager, for the purpose of economy and profit, to adopt it.

The wisdom, and it may be said the necessity, of making differential rates, is apparent. To charge the same rate per ton on all classes of freight as is charged upon wheat, would require the rates on grain to be advanced, so as to absolutely prohibit production, except in localities adjacent to the general markets, or the freight on all other articles to be reduced to the level of wheat, which would plainly make profitable pursuit of the transportation business impossible. No further argument upon this point seems to be necessary, although it will be noted that the complainant does not aver that the wool rate is too high, by itself considered, but that it is relatively high when compared with the rate on wheat. Complainant feels that he has another grievance, by reason of having been charged $7 06 more for hauling a car of goats from Fresno to Fowler, which the company hauled under contract with him from Niles to Fresno for $38 40, and avers that the goats were not taken from the car at Fresno, nor the car taken from the train, but they were simply forwarded nine and a half miles further. Had he directed the goats to be shipped from Niles to Fowler, the service would have been performed for him for $40. Instead, however, he contracted they should be shipped to Fresno, and, after arriving there, he desired them to be forwarded to Fowler. This required a new contract for the extra service, and a new way-bill to be made out. The agent of the company could not do otherwise than to bill them at his rates from Fresno to Fowler, as the company does not, and cannot, make tariffs and rules which will provide for peculiar and exceptional cases, as the one which gives rise to this complaint. Had the shipper given notice to the general office, even after the goats had been shipped from Niles, and desired to have the destination changed to Fowler, the change could have been made, and he received the benefits of the rate of $40 from Niles to Fowler. But this would have required some telegraphing, the actual cost of which would perhaps have equaled, if not exceeded, the difference in the rate to be paid. This complaint appears to be very trivial. Complainant also thinks that the rate of $10 per carload on wool, from Fowler to Fresno, is too high. It is my opinion that a car cannot be moved any distance, with profit, for less than $10, although the legal maximum rate of 15 cents per ton per mile, established by the law incorporating the company, imposes upon it the necessity of removing cars short distances for a lower rate.

COMPLAINT No. 13,

Alleges that the rate on alfalfa seed from Sumner to San Francisco is $180 per car; that it discourages production, as it will subject the producer to a loss of about $246 per carload. Accordingly, if the car were consigned to San Francisco, free of charge, the producer would still be loser in the sum of $66 50. But permit me to go further into the complaint, in which the following is given as the approximate cost of producing and marketing alfalfa seed:

Cost of mowing, per acre	$1 00
Hauling, stacking, etc., per acre	3 00
Thrashing and reclaiming, $78 per day, 3,000 pounds per day on the yield of 30 acres, per acre	2 60
Sacking and hauling to cars, one half cent per pound	50
Freight (?)	90
Total	$8 00

The yield per acre is given as one hundred (100) pounds, hence the cost of 100 pounds would be $8. The freight, however, is but 55 cents per 100 pounds, instead of 90 cents, as charged in the complaint, which would reduce the cost laid down in San Francisco, to $7 65 per 100 pounds.

The Alta, of December 2d, quotes the price of alfalfa seed at from 12 cents to 13 cents per pound, or from $12 to $13 per 100 pounds, and I know of a carload from Utah, paying a much higher freight, having been placed in the market for 11½ cents per pound.

The fact is, then, that instead of being marketed at a loss of $246 per carload, alfalfa seed can be produced in Kern County, and marketed in San Francisco, at a profit of from $4 35 to $5 35 per 100 pounds, or $870 to $1,070 per carload. The complaint under notice also alleges the rate for wheat to he $60 per carload—it is but $55 per carload of ten tons—and reasons that that is sufficient to prove the unfairness of the rate on alfalfa seed. Permit me to test the logic, and at the same time to illustrate the wisdom of differential rates, or of classifying freights. In 1878 a committee of prominent farmers, residing in Fresno and Tulare Counties, submitted to me an estimate of the cost of producing and delivering wheat to the cars. I have that estimate, and can give the names of the farmers, and produce their certificate to verify the figures. You will doubtless agree with me, that they may be fairly applied to Kern as well as Tulare and Fresno Counties. The estimate places the average yield at 20 bushels, or 1,200 pounds per acre, and

the cost of production 67½ cents per bushel, or $1 12½ cents per 100 pounds; that is, the total cost of producing wheat from an acre of ground is $13 50; add to this 27½ cents per 100 pounds for freight, or $3 50 for 1,200 pounds, and the cost of producing and delivering in San Francisco the produce of one acre sown to wheat is $16 80. The outside quotation of wheat in San Francisco is $1 55 per 100 pounds, or for 1,200 pounds (making the gross return per acre) $18 60, the net profit of $1 80 per acre. While I have shown above the net profit from the product of an acre of alfalfa is, from the seed alone, from $4 35 to $5 35—and yet I understand the alfalfa seed is only a bi-product—that the acre yielding 100 pounds of seed has also yielded seven tons of hay. I hope that those who have talked without knowledge against this company's tariff will drop their favorite illustration of alfalfa seed.

COMPLAINT No. 14,

In this: it is presented that the public should not be charged ten (10) cents for the State toll for every small bill of goods, but charged only at the rate of ten cents per ton. With respect to this, the company charges the regular rate, the same that the shipper would have to pay were he to ship his goods by sea-going vessels, in which event toll will be included in his cartage charges paid by the drayman. The money collected by the company for State toll is collected for the State, and turned over to the proper authorities. Complainant alleges that some time in May he shipped a lot of shelving and counters; that he wanted to ship them on flat cars, etc., but the company would not consent, and he was charged the highest rate per 100 pounds, to wit: $2 26½, the total charge, according to his recollection, $492. There was no such shipment made by complainant in May of 1880. The shipments he refers to are undoubtedly those made in 1878. One carload, containing 15,150 pounds fine counters, showcases, etc., was taken at the rate of $1 33½ per 100 pounds, instead of $2 26½, as alleged by shipper. And another carload, for which the freight was estimated—a car containing less, perhaps, than 10,000 pounds—was taken for $120. The total charges, instead of being nearly $500, as stated by shipper, were $322. The same complainant thinks that a charge of $1 80 per 100 pounds for drygoods, shipped in bales, when the same goods can be shipped in cases for $1 20, ought not to be allowed. I have explained above the reasons for rating baled goods higher than cased goods. A reasonable regard for the carrier's interests requires that goods shall be put up in safe and sufficient packages, in order to protect them from damage. The carrier may legally decline to receive goods in insufficient packages, but as in this case with us, as a matter of accommodation to shippers, sometimes accept the defective packages in consideration of a higher rate, to compensate for the higher risk.

Even then the shipper has the option of casing his goods or baling them, paying in the latter case the higher rate. If he prefers to ship in bales at $1 80, it is evident that it is more economical for him to pay that rate, than to pack in cases at $1 20 per 100 pounds, but there is no reason why he should exercise this economy at the risk and damage of the railroad company. He also thinks that a merchant or farmer having miscellaneous goods, ought to be allowed to load a car by paying carload rates as established. What he means by carload rates, as established, is not clearly understood—whether he means carload rates on grain, or live stock, or other articles. This gentleman's ideas of freight tariff differ very materially, you will observe, from those of the gentleman making Complaint No. 7. The latter thinks that a carload rate, which is lower than the rate for small quantities, is a discrimination in favor of the rich against the poor, and protests against it, while Mr. Galtes evidently thinks there is not enough of that kind of discrimination going on. This remark is made respectfully, and simply to mark the prevailing difference of opinion as to what would be the correct principle to govern transportation charges. It illustrates that as long as we have different degrees of knowledge and experience among men, there will be difference of opinion. In view of which, it seems to me that the officers of this company may feel gratified over the result of the inquiry instituted by the Railroad Commissioners, not only as to the nature, but as to the number of the complaints filed.

Respectfully submitted.

(Signed) J. C. STUBBS, General Freight Agent.

CENTRAL PACIFIC RAILROAD COMPANY, GENERAL SUPERINTENDENT'S OFFICE,
SAN FRANCISCO, January 5, 1881.

To the honorable Board of Railroad Commissioners:

GENTLEMEN: Your memorandum of interrogations for 1879 and 1880, relative to the business of the Central Pacific Railroad and leased lines in California, at the hands of your Secretary, Mr. Andrus, was received December eighth.

As the interrogatories for both years are substantially identical, I will treat of 1880 only. You ask:

First—What is the amount of gross earnings of 1880 to your latest returns? State monthly.
Second—How much of above amount was earned in California? State total.
Third—How much of the earnings over the operating expenses? State total.
Fourth—How much earned on local passengers? How much earned on local freight?
Fifth—How much earned on passengers taking passage in California for points outside?
Sixth—How much earned on freights shipped from points in California to points outside?

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These six interrogatories I would answer as a whole, and say that our accounts are not kept so that we can segregate California business from the other upon the line, so as to be able to give you the desired information. Your interrogatory relative to the number of trains run daily, is nearly as difficult to answer as the others; however, I have counted up, and give you herewith, the number of regular passenger trains and regular mixed, or accommodation trains, as per schedule for the present month; but this will give you little or no information of value, from the fact that there are special or excursion trains run when business requires, which are not embraced in the following. Then again, nearly all the regular freight trains have a car attached for the accommodation of passengers locally through the State.

DAILY, BETWEEN STATIONS EACH WAY.	Regular Passenger Trains.	Mixed or Accommodation.
San Francisco and Niles	4	1
Niles and Livermore	2	1
Livermore and Tracy	1	----
Tracy and Galt	2	2
Galt and Sacramento	1	2
Niles and San José	1	3
San Francisco and Port Costa	5	5
Port Costa and Davis	3	----
Port Costa and Antioch	3	2
Antioch and Byron	2	2
Byron and Tracy	1	2
Davis and Sacramento	5	----
Davis and Willows	1	1
Davis and Woodland	2	1
Davis and Knight's Landing	1	----
Vallejo and Calistoga	2	----
Vallejo and Napa Junction	4	----
Vallejo and Suisun	2	----
Sacramento and Roseville	3	2
Roseville and Redding	1	1
Roseville and Reno	2	1
Galt and Ione	----	1
Lathrop and Goshen	1	1
Goshen and Los Angeles	1	1
Goshen and Huron	----	1
Los Angeles and Arizona	----	3
Los Angeles and Wilmington	----	2
Los Angeles and Santa Ana	----	1
Los Angeles and Santa Monica	----	1
San Francisco and Oakland	29	----
San Francisco and East Oakland	20	----
San Francisco and Alameda	26	----
San Francisco and Berkeley	12	----
San Francisco and West Berkeley	10	----
San Francisco and Shell Mound	22	----

To your interrogatory No. 7, you ask us to "state the number of passengers carried in this State in 1880, to your latest returns, on the Central Pacific Railroad and leased lines, from and to stations on different sections of the road, so as to show the volume of travel on distinct portions of the road."

This information is nearly as difficult to obtain and give you in an intelligible form as that asked for in the first six interrogatories; but feeling desirous of doing all we could to get for you the information wanted, we at once, on receipt of your memorandum on the eighth ultimo, placed a large corps of clerks upon this work, and herewith hand you the result.

To the casual observer it would seem to be but the work of an hour; but you will notice here are 289 stations on the Central Pacific Railroad and leased lines in California, requiring ten sheets of foolscap, doubled ruled, to each station, showing the number of passengers carried, and average number per day, requiring 120 entries to each sheet. You will also observe there are sixty distinctions to each sheet, and in the aggregate 2,890 sheets.

You ask for this information for the year 1879, and for that portion of 1880 up to and including our latest returns; but I am sure, when you have seen the great number of printed forms necessary to accomplish this work, and consider the labor put forth, you will, I think, be satisfied with the showing for one month, namely, September, 1880, having the largest passenger

business. Every station report will be eyeleted together—ten sheets. I also send you herewith eleven sheets, eyeleted together, showing a recapitulation of passengers carried from any one station to all the others, and to any one station from all others, and showing the total number and average per day. Upon looking the recapitulation over more carefully, we have made a further synopsis, showing that there were forty-six stations from which there were no passengers carried:

Eight from which the daily average was	1/30
Nine from which the daily average was	1/15
Six from which the daily average was	1/10
Seven from which the daily average was	2/15
Three from which the daily average was	1/6
Three from which the daily average was	1/7
Three from which the daily average was	3/30
Two from which the daily average was	4/15
Five from which the daily average was	1/6
Three from which the daily average was	1/3
Three from which the daily average was	11/30
Two from which the daily average was	4/10
One from which the daily average was	13/30
Three from which the daily average was	7/15
Four from which the daily average was	1/2

There were also 40 stations to which there were no tickets sold, and there were:

Fourteen to which the daily average was	1/30
Eleven to which the daily average was	1/15
Eight to which the daily average was	1/10
Four to which the daily average was	2/15
One to which the daily average was	1/6
Six to which the daily average was	1/7
Three to which the daily average was	3/30
Two to which the daily average was	4/15
One to which the daily average was	1/10
Six to which the daily average was	1/3
One to which the daily average was	11/30
Three to which the daily average was	4/10
Two to which the daily average was	13/30
Three to which the daily average was	7/15
Four to which the daily average was	1/2

This list might be continued, showing very many more stations that did not average one passenger a day either to or from.

Trusting the information we give you here may be of interest and entirely satisfactory, I am yours truly,

(Signed) A. N. TOWNE,
General Superintendent.

IN THE CIRCUIT COURT OF THE UNITED STATES, IN AND FOR THE DISTRICT OF CALIFORNIA.

The Pacific Coast Steamship Company vs. The Board of Railroad Commissioners of the State of California.

To the Judges of the Circuit Court of the United States for the District of California:

The Pacific Coast Steamship Company, a corporation of the State of California, brings this, its bill against The Board of Railroad Commissioners of the State of California, and thereupon your orator complains and says:

First—That George Stoneman, Joseph S. Cone, and C. J. Beerstecher, are the duly elected and qualified Railroad Commissioners of the said State, and constitute the Board of Railroad Commissioners of the State of California.

Second—The Pacific Coast Steamship Company is, and ever since the thirtieth day of September, one thousand eight hundred and seventy-six, has been a corporation, duly organized and existing under and by virtue of the laws of the said State of California, for the transaction of the business of a steamship company on the Pacific Coast, and in any of the bays or harbors thereof, and anywhere in the Pacific Ocean.

Third—The said steamship company owns a large number of steamships, which are actually engaged in the coasting trade, and make voyages therein along the Pacific Coast from San Francisco, in California, to Portland and Astoria, in Oregon, and to ports on Puget Sound, Washington Territory, and to ports in British Columbia, in the Dominion of Canada, and from said San Francisco to San Diego, in California, touching at many and divers way ports on the said coast of California. All of the said steamships, in making their said voyages, navigate the Pacific Ocean more than a marine league from the shore.

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Fourth—The said steamships carry goods sent from cities in States east of the Rocky Mountains, upon through bills of lading across the continent by rail to San Francisco, some of which are at the latter port transferred to said steamships in the original unopened packages, and thence carried by them to ports of destination, in the said States of California and Oregon, Washington Territory, and British Columbia. Some of the merchandise transported by the said company consists of goods imported from other States, and from foreign countries, but which have been opened in this State, and are not in the original package. Passengers with through tickets, and also passengers without through tickets, for Texas, Arizona, and New Mexico, go to San Pedro, in California, upon said steamships, thence by rail and stage to and through Arizona and New Mexico to Texas. Passengers with through tickets from Europe, for British Columbia, Washington Territory, and Oregon, are carried from San Francisco by the said company's steamships to their ports of destination. Passengers are also transported on the said steamships from different ports within the State of California to other ports within the said State. Freight and merchandise is also shipped and carried on board of said steamers from ports in California to other ports in California, some of which freight consists of indigenous products and merchandise domestic to the State of California. Freight and merchandise is also shipped and carried on board of said steamers from southern ports in California to ports in Oregon and British Columbia, and to cities in States east of the Rocky Mountains, upon through bills of lading. That all of said steamships are enrolled and licensed to carry on the coasting trade by the Government of the United States, and are carrying on the said coasting trade under and by virtue of the said enrollment and license, and the Acts of Congress governing and regulating the said trade.

Fifth—The Board of Railroad Commissioners claim that, under and by virtue of powers vested in them by the Constitution and laws of the said State of California, they have the power, and it is their duty:

1. To establish rates of charges for the transportation of passengers and freight carried by the said steamships.
2. To examine the books, records, and papers of said steamship company.
3. To hear and determine complaints against the said company, and to punish the said company for contempt of their orders and processes, and to enforce their decisions.
4. To prescribe a uniform system of accounts to be kept by the said corporation.

And the said defendant threatens to and will establish the said rates of charge for the transportation of passengers and freight carried by the said steamships; and threatens to and will examine the said books, records, and papers of the said steamship company, and hear and determine complaints against the said company, and punish said company for contempt and disobedience of the orders and processes of the said defendants, and enforce their decisions; and threaten to and will prescribe a uniform system of accounts to be kept by the said corporation, unless restrained and enjoined by this honorable Court.

That by so enforcing and carrying out the said threats, the said defendant will cause to your orator great and irreparable damage, and will cause and create against your said orator a multiplicity of suits.

Wherefore, your orator prays for an injunction of this honorable Court, enjoining and restraining the said defendant from doing or performing any of the acts so threatened as hereinbefore fully set out; and for such other and further order and relief as to equity shall seem just.

And your orator further prays that a writ of subpœna issue herein, directed to the said defendant, commanding it to appear and show cause, if any it has, why the prayer of your orator should not be granted.

JOS. P. HOGE, and
ROCHE & DESBECK,
Solicitors for Plaintiff.

IN THE CIRCUIT COURT OF THE UNITED STATES, IN AND FOR THE DISTRICT OF CALIFORNIA.

The Pacific Coast Steamship Company vs. the Board of Railroad Commissioners of the State of California.

Now comes the defendant in the above entitled action, and makes answer to plaintiff's complaint, as follows:

First—The defendant admits the allegations set forth in the first and second subdivisions of said complaint.

Second—The defendant admits that the plaintiff owns a large number of steamships—to wit, seventeen—which are actually engaged in the coasting trade, and make voyages therein along the coast of California; but alleges, upon information and belief, that only four of said steamships make voyages from any port in the State of California to any port outside thereof.

Third—The defendant admits that plaintiff's steamships carry goods brought to San Francisco on through bills of lading from points outside of the State of California, some of which are, at said port of San Francisco, transferred to said steamships in the original package, and some after the original package has been opened, and thence carried by said steamships to ports and points within the State of California, and to ports and points outside thereof, as stated in subdivision four of said complaint. But in respect thereof, further answers that the freight thus carried by plaintiff, or the larger portion thereof, comes to the port of San Francisco, and

no farther, on said through bill of lading, and is thence shipped by its owners, agents, or consignees, on board of plaintiff's steamships, some of which is consigned to points within the State of California, and some to points without. Admits that passengers with through tickets, and passengers without through tickets, go upon plaintiff's steamships to San Pedro, in the State of California, thence by rail and by stage to Arizona, New Mexico, and Texas; but in respect thereof, alleges that such passengers, or a large portion of them, travel on plaintiff's steamships to San Pedro, and other points within the State of California, irrespective of their destination outside of the State, just as passengers whose destination is some point within the State. Admits that freight is shipped on board of and carried by plaintiff's steamships from southern ports in California to ports in Oregon and British Columbia, and to cities east of the Rocky Mountains, on through bills of lading. Admits that all of plaintiff's steamships are enrolled and licensed, as set forth in subdivision four of the complaint herein. Admits generally the allegations of subdivision four of the complaint; but alleges, in respect thereto, that the main business of plaintiff's steamships—that is to say, more than one half of it—consists of the transportation of freight and passengers from port to port within the State of California; that such freight is composed principally of the produce and manufactures and goods of the citizens and inhabitants of the State of California consigned to citizens and inhabitants of the State of California; and that such passengers are citizens and inhabitants of the State of California, traveling from port to port within said State, on business, or for health or pleasure.

Fourth—The defendant admits that under and by virtue of the powers vested in it by the Constitution and laws of the State of California, it claims to have the power, and it is its duty:

1. To establish maximum rates of charges for the transportation of passengers and freight carried by plaintiff on its steamships, and by all other transportation companies within the State, from all the ports to all the ports within the State of California.
2. To examine the books, records, and papers of plaintiff.
3. To hear and determine complaints against the plaintiff, and to punish it for contempt of the orders and processes of defendant, and to enforce its decisions.
4. To prescribe a uniform system of accounts to be kept by plaintiff.

Fifth—And the said defendant admits that it threatens to, and will, unless legally restrained therefrom, establish maximum rates of charges for the transportation of passengers and freight carried by plaintiff, and all other transportation companies within this State, from ports within said State to ports within said State, but denies that it will or intends to establish rates of charges for the transportation of passengers or freight carried by said steamships, or any other transportation companies, from ports within said State to ports within the same; and denies that it will or intends to establish rates of charges for the transportation of passengers or freight carried by said steamships or any other transportation company, from points without the said State to points within the same; admits that it threatens to and will examine the books, records, and papers of plaintiff; will hear and determine complaints against it; will punish it for contempt and disobedience of the orders of this defendant; will enforce its decisions, and will prescribe a uniform system of accounts for plaintiff unless legally restrained; but denies that it threatens to or will examine the books, or do or attempt to do any of the acts mentioned above, except in so far as the same pertains to the regulation of the rates of charges for carrying passengers and freight by plaintiff on its said steamships from points within this State to points within the same. And the defendant further denies that if it does the acts and things threatened, as in this answer above set forth, it will cause a multiplicity of suits, or will cause irreparable or any damage to plaintiff.

Wherefore, defendant prays judgment that plaintiff takes nothing by its action, and that defendant goes hence with its costs.

D. L. SMOOT,
District Attorney of the City and County of San Francisco, Solicitor.

CLITUS BARBOUR,
BELCHER & BELCHER, and
CHIPMAN & GARTER,
Of Counsel.

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SECOND ANNUAL REPORT

OF THE

Board of Railroad Commissioners.

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REPORT.

To his Excellency GEORGE C. PERKINS, *Governor:*

SIR: On the fourth day of February last we had the honor of submitting our first report to your Excellency. In that report we showed that the labors of the Board had, during the first nine months of its organization, been directed to the acquisition of information regarding the subjects upon which it has to deal, but that owing to the illness of one of the Commissioners it had not been possible to make an exhibit of the conclusions reached by us. Since that report was presented we have been engaged in careful consideration of the existing freight and passenger rates on the railroads of California, with a view to their reduction wherever practicable. We now present you with a list of tables, showing a series of reductions in freight rates, which have been adopted at a regular meeting of the Board, and from which we have the best reason to believe the public will derive signal benefits. The reductions made in freight rates affect a large class of articles, viz.: grain, wool, wood, hay, cattle, hogs, sheep, and other low priced but largely raised produce, depending upon cheap transportation for successful production. The tendency of railroad development has thus far been toward the diminution of charges in proportion to the growth of business. In this way three considerable and general reductions in freight tariffs have succeeded one another on the Central Pacific and leased lines within the past few years. For the present we have adopted the existing rates on general merchandise as the maximum rate, nor have we thought it advisable for the present to make any changes in the passenger tariff now in operation. The reasons for our course in this respect are such as must commend themselves to candid judgments.

On entering upon the duties of our office we found a popular demand for sweeping reductions in freights and fares, and vested with powers so comprehensive that the most arbitrary changes were possible to us. But the moment we began to investigate the subject before us, with a view to the carrying out of the popular desire, we were compelled to realize that arbitrary and blind action could not be taken without putting at risk the interest of the public equally with those of the railroads. We discovered that the mutuality of interest between the producers and the transportation agents was, in fact, so much more intimate than had been generally recognized, that it would be absolutely impossible for us, lacking the necessary knowledge, to strike at one without endangering the other; and when, in our search for information, we examined the labors of our predecessors, in this and other States, we learned that they had, one and all, the same experience, and that one and all had, however slowly or

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reluctantly, been forced to the same conclusion, viz.: that arbitrary regulation of railroad charges is not only unjust to the railroads, but full of danger and injury to the public. It may be interesting to quote in this connection a pertinent paragraph from the report of our predecessors in office, Messrs. Stoneman, Doyle, and Smith. These gentlemen say (page 14):

A proposition to fix by law the rates of freight on each commodity transported, is a proposal to determine the proportion in which the difference in terminal values shall be divided between the producer and the carrier, and to value the share allotted to the latter in advance. But difference of terminal values is so utterly different in the case of the innumerable variety of different commodities carried; so various even in the case of the same commodity, with season, place, and circumstance; is so dependent, in many instances, on the course of market values abroad, which fluctuates even from day to day, that it is simply impossible to frame a tariff based on such division which will not prove either ineffectual on the one hand or unjust on the other.

These and similar conclusions we found to be fortified by every step of our own researches. The complexity of the situation, the instability of its factors, the necessity of taking into account considerations which could not be dealt with save on the spur of the moment, the relation of particular interests to the general interests, the equities of the case on both sides, the main elements of the cost of transportation and of the remuneration of service on all and each, convinced us that to undertake to compile a classified tariff from a standpoint which practically ignored some of the most vital factors of railroad management, would be simply to involve the whole situation in confusion, and to give to the "opponents of regulation a plausable argument against any further experiment in that direction." We were satisfied, in fact, as all who have seriously studied this subject have become satisfied, that it could not be approached with any hope of a satisfactory solution unless it was approached with a determination to hold the balance evenly between the interests concerned, and to seek equitable and not arbitrary sentiments of all issues in dispute. To the end that these objects might be secured, we therefore adopted resolutions to the following effect, in full Board and by a unanimous vote:

WHEREAS, The Constitution has vested in this Board powers of a legislative, judicial, and executive character in reference to transportation within this State, viz.: the power to establish rates of charges for transportation of passengers and freight by railroad and other transportation companies, and to that end the power of serving subpœnas and all other necessary processes; the power of hearing and determining complaints against the railroads and other transportation companies, and to that end to send for persons and papers, to administer oaths, to take testimony, and to punish for contempt of orders and processes in the same manner and to the same extent as Courts of record, and to enforce decisions and correct abuses through the medium of Courts, and to order a prescribed and uniform system of accounts to be kept by all such corporations and companies; and whereas, the Constitution declares that every railroad or other transportation company which shall fail or refuse to conform to such rates as shall be established by this Board, or shall charge rates in excess thereof, or shall fail to keep their accounts in accordance with such system as this Board shall prescribe, shall be fined not exceeding $20,000 for such offense; that any officer, agent, or employé of any such corporation or company, who shall demand or receive rates in excess of the rates established by this Board, shall be fined not exceeding $5,000, or be imprisoned not exceeding one year; and whereas, the Constitution declares further that the rates of fares and freights established by this Board shall be deemed conclusively just and reasonable in all controversies, civil and criminal, to which corporations and companies may become parties; and whereas, the course of procedure established in the creation of this Board differs from methods heretofore in use for the adjustment of individual and property rights, viz., intervention of juries and review by other tribunals; therefore, be it

Resolved, That in determining rates of charges for transportation of freights and fares on the various lines, or portions of lines, of transportation within this State, the Board will have regard to the equities between shippers and carriers, and the protection of private property invested in transportation enterprises, and determining what is a just and reasonable rate; will consider the value of the services performed, distance of carriage, volume and direction of traffic, the general character thereof to be fixed by classification as to volume, weight, value, the liability to accident, climatic influences, compilation, grades, curvatures, cost of maintenance, and that in fixing, establishing, or adopting fares and freights, all parties to all cases arising out of the adjustment of rates, before any such rates shall become and be established as the rates of this Board, shall have full and ample opportunity to appear before this Board to be heard in the premises, by counsel or otherwise, to summon witnesses, and to this end shall be entitled to processes of this Board, to the end that the judgment may be equitable, and its conclusions be just and reasonable.

Having thus given guarantees of our desire to act fairly throughout, it became necessary to inquire by what means the interest of the public, in reduced rates of transportation, could best be subserved. We were called, in the first place, to determine what constituted "reasonable" rates, the Constitution having left that question entirely to our discretion. Now there are few subjects more difficult to adjudicate, for there are few subjects on which greater differences of opinion appear to exist. For the most part men derive their ideas concerning it from their notions of what it costs to build a railroad, and they are very apt to confuse themselves with utterly irrelevant calculations as to the incidents of stock inflation upon tariffs, an incident which, as a matter of fact, has never had any existence, save in the imagination of persons ignorant of the subject. The belief that railroad rates are often fixed with a view to furnish certain percentages of profit upon a certain amount of real or fictitious capital is fallacious. No such method would be possible, and no such method has ever been attempted. The watering of stock has no practical connection with freights and passenger charges. Whoever doubts this may satisfy himself by a careful review of all the stock-watering transactions which have taken place in this country during the last ten years, and by a comparison between these transactions and the current tariffs, it will be found that the stock-watering has not affected the tariff, save in the most indirect and fitful way, and that the idea of any systematic connection between the two things is entirely erroneous. The question of what are reasonable rates, may be supposed to depend largely upon the amount of a railroad's earnings, but in what proportion these earnings should be divided is a matter concerning which the most radical differences of views exist. For example, Charles Francis Adams, an admitted high authority, has very recently expressed the opinion that "to pay interest on the capital invested in the railroads in this country, must, on the average, earn their operating expenses, and half as much, or fifty per cent more. In England they must earn their operating expenses, and as much or one hundred per cent more. In neither country would ten per cent above operating expenses begin even to pay interest on capital."

Without indorsing either view, it is the plain duty of this Board to endeavor to find justification for a reduction which, without endangering the efficiency of the transportation service, will benefit the people. And this has been effected by a careful and dispassionate analysis of the situation. In the first place it must be recognized that the railroads of California have been built and operated under peculiar conditions. The railroad system of the State is in advance of the development of the State and its settlement. The cost of operations is virtually a fixed rate; that is to say, the cost of running a locomotive and train of cars, given the locality, is capable of being estimated with precision. This cost is independent of the work done; that is to say, an empty train and engine going over a road, will cost

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an amount which is not increased in proportion by the loading of the cars. The profits of railroad operations, consequently, depend upon the amount of tonnage carried, and it follows from this that, though a railroad obtains high freight rates, its profits may be low, if the aggregate tonnage carried by it is small; while a railroad obtaining low freight rates may make large profits if the aggregate of the tonnage carried by it is great. A second corollary of this condition of things is that a comparatively small reduction on the unit of railroad calculation, viz.: the ton, though apparently productive of trivial changes, will, when applied to the aggregate tonnage of the road, result in a diminution of earnings, which may bring about paralyzing effects. It is, therefore, necessary that the reductions should be made with the utmost caution. The reduction on each ton must be multiplied by the whole number of tons carried, and the large figure resulting from this calculation has augmented significance, when it is remembered that the entire volume of such reduction is from the sum representing the net profit. The whole amount of all reduction is, therefore, a subtraction, not simply from the aggregate gross income of a transportation company, but specially from its profits.

Again, in California there are great fluctuations in the volume of railroad traffic. It is necessary for the railroads to keep a large amount of rolling stock on hand, but during several months a considerable portion of this has little or nothing to do, and consequently is earning nothing. There is, it is true, one species of fluctuation to which the local railroads are not liable, and it is a result of the consolidation which has attained here. In the Eastern States the most serious evils to the public have been produced by that fierce fluctuation in rates which from time to time has sprung up between rival lines, and the first effect of which has always been the sudden and radical change of rates. These fluctuations have been so rapid and unforeseen that they have converted all business having any dependence upon transportation into speculation. The merchant has been unable to tell from day to day what the staples in which he dealt would be worth. He could not venture to increase or diminish his stock without encountering the most serious risks. He was forced to gamble against his inclination. In this way all business has been disturbed, and uncertainty and loss have been entailed upon the commercial classes. The absence of such fluctuations in California conclusively shows that the transportation companies of this State have adhered to a strictly legitimate business as carriers, and have not engaged in speculation in the products of the country, with the advantage radical fluctuations in freight rates confers upon those who control such fluctuations. The trunk road which supplies the chief exterior requirements being in competition with an ocean route, its rates cannot be made the sport of speculative changes in rates. It must continue to underbid the seas, or it must abandon through business. The local and leased lines being with few exceptions in the same hands, have been equally free from the kind of fluctuations referred to, and in this respect the situation has been to the advantage of the public. In considering the practicability of a reduction of rates it has become necessary to examine the commercial laws governing the question, and therefore we have analyzed the principles upon which the apportionment of rates has thus far been adjusted.

It has recently been alleged, as a special and obvious grievance and

abuse, that railroad companies fix their freight rates by a comparative ratio to the value of goods transported. The reason why this has seemed unjust appears to be that those who have called attention to it have always gone beyond the just implication of the principle, and have assumed that the practice was to charge as much as could be imposed without placing a prohibition upon transportation. But it is, we think, apparent that the principle in itself is, if not ideally the best, at least the best the exigencies of transportation admit of. For it is impossible to regulate charges, either on the principle of a fixed percentage of profit on the capital invested, or on the cost of service. The value of the service rendered must be the criterion, and there would seem to be no other means of ascertaining this than by ascertaining the market value of the goods transported. The real guaranty for the protection of the shipper in this regard consists in the interest of the carrier, which compels him so to regulate his charges that they shall not operate prohibitively, and that they shall not interfere with the extension of business. And it may be observed that unless the whole field of transportation is surveyed, it must be impossible to reach a just appreciation of the merits of the case, since the entire system of railroad traffic is inter-dependent and reciprocal. For example, it is a well established maxim of transportation that the higher the maximum the lower the minimum will be. Now, the explanation of this maxim really contains the elucidation of the freight question. For it means that by charging high rates upon the classes of goods which will bear high rates, it is made possible to charge low rates upon the classes of goods which must have low rates or not be moved at all. To charge comparatively higher rates upon general merchandise is not to impose any burden upon the public. Practically, as experience shows, it does not affect the retail price, and neither does it affect the profit of the merchant. To make large reductions upon general merchandise would therefore be to cripple transportation; but, in fact, it would still more certainly cripple production, for these interests are linked together. Production is primarily powerless without transportation. The latter is in fact the vivifying force which gives production energy and utility. It is the machinery of distribution to which mankind are indebted for the rapid progress and great prosperity enjoyed in these latter years. But the great staples of importation, the staples which we have succeeded in reducing to freight charges on, as shown by the accompanying tables, cannot, as a rule, support themselves as manufactured goods, and the higher classes of merchandise do. They will not bear high rates, for their market value is low, and it is so restricted by competition that it can seldom be raised.

If, therefore, these staples cannot be carried at a very low figure they must forego transportation altogether; and that is equivalent to the ruin of all producers who have settled outside of a certain limited area surrounding the centers of distribution or shipment. And if the railroads are compelled to carry general merchandise at low rates their earnings will be so curtailed that it will be impossible for them to afford to carry grain, wool, hides, wood, and other staples, at rates which will permit of their transportation at all. At present it is the practice of railroads to extend the area of profitable production as much as possible. Thus the selfish business interests of the producer afford the most effective guaranty to the latter that his distance from a market will not be used to cripple him. The higher the

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maximum the lower the minimum will be is a rule the just comprehension of which further exhibits the futility of all attempts to do away with classification, or to make it arbitrary. A great railroad system is quite as complex as a great Government, and quite as impossible of being regulated by cast-iron provisions. Transportation is a business in which the needs of the time are for the most part paramount. The currents and channels of business and settlement are constantly changing, and as they change the necessities of the railroad business become altered. To develop new business, to foster young and growing industries, to accommodate infant settlements, require new regulations, and every such change brings into view fresh relations and complications, all of which have to be taken into consideration. If, therefore, it were possible to survey the whole field on a given day to grasp the requirements of the hour, and to meet every want with a special adjustment, the instability of the situation is such that it would be necessary to revise the entire settlement on the morrow, or the operation of unforeseen influences would wreck the experiment hopelessly.

There has never been any doubt in the public mind as to the desirability of reducing the minimum rate of freights, but there has been confusion of thought respecting its relations to the maximum. In fact, the two are inseparable in the existing system of transportation, and unless it is proposed to remodel that system upon some hitherto undiscovered principle, they will have to be recognized as incapable of elimination or radical alteration, and, as regards the system itself, it must be borne in mind that whatever its defects may be it is at least the product of natural development from the surrounding circumstances. The presumption in favor of the rationality of a system which has grown out of the needs of the public and the requirements of the railroads is strong. It must be admitted that such a system is more likely to suit the circumstances than one evolved from abstract considerations without regard to the existing facts. It may be worth while to quote some recent remarks of Charles Francis Adams once more on this head. He says: "Our laws, the political catchwords which outweigh all argument and uninformed public opinion, do not allow the railroad system to follow out quietly its natural course of development, subject to an intelligent restraint where the development runs into essential abuses. We are always pounding away at it, it is true, but generally after a crazy, mistaken fashion, or on some false or quite immaterial issue. The weak points of the system are not generally known; the patience necessary to find them out is looked upon as a sign of timidity or treachery, and thus every attempt at dealing with a really great and intricate subject takes, sooner or later, the form of a new quack cure-all legislative pill." And he concludes: "What is needed, it seems to me, is the continuous pressure and the steady building up of legislation, which can only come through the employment of trained specialists—a class politically despised, but of which the railroads avail themselves, with good results to themselves." We have quoted these sentences to show how a prolonged and conscientious study of the railroad question has convinced a particularly lucid and powerful intelligence of the absolute need of caution, hesitation, and moderate action in this connection.

The investigations which we have ourselves made in preparing to reduce freight rates have entirely persuaded us of the truth of this

position; and the more desirous such a Board as this may be to benefit the public, and to secure the greatest possible advantages from the regulation of transportation, the more it must become assured of the impossibility of venturing upon any arbitrary or sweeping measures. With the power conferred upon us by the Constitution and the Legislature, nothing would have been easier than for us to have met together, and, without permitting the railroads to make any representation on their own behalf, to have promulgated some large and general reduction of rates. The effects of such a policy, however, would unquestionably have been unfortunate. For, on the one hand, it cannot be doubted that corporations would have resisted such a reduction by every legal resort in their power, and thus have postponed the application of it indefinitely. And, on the other hand, it is certain that if such a tariff had been submitted to, it would have produced the most unexpected and calamitous results, injuring those whom it was intended to benefit, ruining those whom it was intended to enrich, and paralyzing transportation instead of diminishing the friction of its working. We have made no reference to the question of the equities of the railroads, though they demand the most serious recognition. An arbitrary disposition of the property of others, no matter under what color of legality, no man trained in respect for the fundamental principles of the Constitution of the United States can approve or can execute, without serious doubts concerning the morality of such transaction. It has been our endeavor so to deal with this difficult and delicate subject that the interests of neither party should suffer in our hands. We approached it with a firm determination to relieve the public, if such relief was found practicable. Had we entered upon the work in a spirit of rancorous hostility to the railroads and a vindictive resolution to injure them, we should, in all probability, have accomplished nothing beyond engaging the State in interminable litigation. But by setting before ourselves a standard of equity as the guide for our conduct, we have succeeded in obtaining from the railroad companies acquiescence in a scheme of reduction which must be productive of great present benefits to the public, and which affords an encouraging earnest of future and perhaps even more important changes.

It is noteworthy that while popular clamor, unguided by intelligence, has, notwithstanding its force, failed in the past to bring about any substantial reduction in freight charges in California, yet the railroads themselves have on three different occasions voluntarily reduced their tariffs. The explanation of this is that as the development of the State proceeds, as settlements become more dense, as business enlarges, it becomes not only possible, but advisable to lower the rates of transportation. It is never with the approval of his business sense that a railroad manager maintains rates which tend at all towards prohibition. He is too well aware that the volume of business under the normal conditions is the real test of prosperity. But, as we have shown in this report, the circumstances of transportation in California are essentially different from those of the Eastern States, and it has been impossible to avoid the embarrassments which are inseparable from a railroad system largely in advance of the development of the community to whose wants it ministers. The tendency of our railroads towards reduction of rates demonstrates, however, that as soon as circumstances make such changes

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feasible, they are certain to be prompted by business considerations. As it is, we have made the only reductions which we could perceive to be practicable, which is to say the only reductions which would not have involved injury either to the railroads, or to the public, or to both. A reduction of the rates on general merchandise would have made it impracticable to reduce on the low priced staples. Since, as we have shown, the necessary effect of reducing the maximum is to increase the minimum, it should always be remembered that the luxuries of life only are affected by the maximums, while the industrial products of the country belong to the plane of minimums. We consider it our duty so to act as that the greatest good to the greatest number should result from our policy, and this, we believe, has been attained. Our position is one of extreme difficulty beyond a question. If we treat the railroads harshly and arbitrarily, we are denounced as communists and confiscators. If we do not treat them harshly, we are accused of having sold out to them. As this has been the experience of every Railroad Commission that has been organized, however, perhaps we ought not to be surprised at it.

In effect, it is a mode of treatment which has determined us upon the erection of a standard of equity to which we could attach ourselves without harboring a doubt, and as a result we have simply undertaken to arbitrate fairly between the public and the transportation agencies. The solution of the railroad problem is not to be expected in a short time, however. There are evils and abuses connected with it which do not as yet yield to the only forms of treatment which reason and experience sanction. It is open to the dangers which the exercise of great powers engender. The same may be said of every form of human enterprise, no doubt, but it has been more publicly discussed in the case of the railroads because of the anomalous nature of their legal relations to the State. All violent and summary attempts to do away with these evils and abuses have hitherto failed, and have brought disaster upon the public, in whose interests they were made. These lessons could not be lost upon such as were earnestly desirous of adjusting the issue, if possible, with the utmost advantage to the people. We have conscientiously investigated the subject placed in our hands, and have done the best that seemed possible under the circumstances. The success thus gained by the reasonable methods and the equitable principles justify us in anticipating that no greater difficulty will be experienced in bringing about still further reductions in freight rates, and also in reducing passenger rates as the growth of the State enlarges the volume of transportation, and thus increases the ratio of profits to cost of operation.

J. S. CONE,
President, and Commissioner First District.

C. J. BEERSTECHER,
Commissioner Second District.

Dated, SAN FRANCISCO, May 10, 1881.

THIRD ANNUAL REPORT

OF THE

Board of Railroad Commissioners.

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REPORT.

To his Excellency GEORGE C. PERKINS, *Governor of California:*

In pursuance of Section 22 of Article XI of the Constitution of the State, we submit our third annual report. For reasons expressed in our former reports to your Excellency, we did not enter into the discussion of the principles involved in the establishment of a just and reasonable schedule of fares and rates. We use the term "just and reasonable" here at the outset of the report, assuming that no one, whether friend or foe of the transportation companies, or of this Commission, desires to do injustice to either. And here it may not be out of place to preface it by giving a short sketch of the history of the origin of the Transportation Commission in this State.

As early as 1865 the question of regulating carriers' charges was a subject of some consideration in the Legislature. In 1872 the question of regulating railroad charges by legislative Acts began to be agitated in a more decided form. It did not assume direct character until the session of 1873–4. At this session the first bill establishing an inflexible rate for passengers and freight was introduced in the Assembly. It was popularly known as the "Freeman Bill," and without material amendment passed that branch of the Legislature. In the Senate a bill was introduced which was popularly known as the "Irwin Bill," as well as one which was known as the "Transportation Commission Bill." The Irwin Bill was defeated in the Senate. The Transportation Commissioner Bill was substituted for the Freeman Bill and transmitted to the Assembly, which was rejected by that body. This ended the question in the Legislature for that session.

At the session of 1875–6 a bill known as the "Archer Bill" was introduced into the Assembly, and passed that body. This bill, like the Freeman Bill, established inflexible rates for all railroad companies operated by steam except street railroads. The reputation of the authors of these measures enlisted warm advocates in both branches of the Legislature; yet the Senate Committees, after giving them that deliberation which should always characterize the action of all conservative legislative bodies, felt compelled to report against the passage of the measures at the respective sessions. For the Archer Bill, the Act popularly styled the "O'Connor Bill" was passed in the Senate as a substitute. Its action was concurred in by the Assembly, and was approved by the Governor on April 3, 1876. The latter Act did not establish inflexible schedules of fares and rates, but did establish as the maximum of both the rates actually in force on the first day of January, 1876, leaving the companies free to regulate within those rates to suit the conditions of their business. The Legislature recognized the difficulty of establishing a relation inflexi-

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bly between shipper and carrier, the conditions of which were constantly changing. This Act provided for a Board of three Commissioners, who had power to inspect the railroads within the State; hear complaints, intervene and settle differences, and to enforce penalties for extortion and unjust discrimination, and to report the result of their observations to the Legislature. The result of the labors of the Board are embodied in a report dated December 1, 1877. In support of the principles we intend to discuss in this report, we shall make liberal extracts from that report, as well as that of the successor of that Board, made to the Legislature January 1, 1880.

During the session of 1877–8, certain bills were introduced into the Assembly which, although not establishing a schedule of fares and rates, yet the effect of which would be to reduce rates at all intermediate and non-competitive points to the rates established at competitive points. After a long struggle the Legislature agreed upon a bill, commonly called the "Hart Bill." By suggestion of the Commissioners, ten or twelve amendments were adopted, which made it an improvement on the Act it superseded, and reduced the expenses of the Commission to one third that of the former one. This Act did not empower the Commissioner to establish fares and rates, but simply to inspect the books and papers of the companies, and by amicable interposition to endeavor to remove any antagonism that might arise between the producer and the carrier. The report submitted to the Legislature, dated December 1, 1879, shows an amount of labor and careful study of the subject of transportation which few men, under similar circumstances, would have undertaken. Governor Irwin, in his annual message to the Legislature, referring to the report, said:

> Under the Act of April 1, 1878, creating the office of Transportation Commissioner, prescribing its powers and duties, etc., I appointed Hon. B. F. Tuttle, a gentleman well and favorably known throughout the State for his integrity and ability, Transportation Commissioner. He has, with great energy and assiduity, devoted himself to the duties of his office. The transactions of his office, and the results of his study and investigation of the problems connected with the transportation of the State, he will present to the Legislature.
>
> The lateness of the hour at which I was able to obtain a copy of the printed report has prevented me from making any close examination of its contents. The railroad problem is one of the most important, as well as one of the most difficult, with which we have to deal.
>
> Under the new Constitution, however, the power over railroad and other transportation companies, which, under the old, was vested exclusively in the Legislature, is transferred mainly to the Railroad Commission.
>
> The power of the State to prescribe what transportation companies may charge for their services, *where such power has not been surrendered by contract with the companies*, is no longer open to question. * * *

Whatever opinions may be expressed regarding that report, none of the positions therein taken upon the various questions discussed relative to transportation have ever been successfully controverted. It has been commended by some of the profound and thoughtful men in other States, and for nearly three years after the Governor's appointment there was very little agitation or excitement growing out of the transportation question. As we shall have occasion to discuss and quote from the reports of our predecessors as we advance, farther notice of them at this point will be deferred.

The new Constitution, which took effect January 1, 1880, created a Railroad Commission, to be elected by the people, consisting of three members. The people of the State, in the most authoritative manner, invested this Commission with the power formally possessed by the three coördinate departments of the State Government, viz.: legislature, executive, and judicial, over transportation companies.

Whatever differences of opinion existed at the time, or may still exist, as to the policy of creating a department of government and investing it with powers so far-reaching, is not now open for discussion. It is an accomplished fact, and must be treated as such in this report. Farther on we shall detail our experience relative to the questions that have come before us regarding the relations of shippers and carriers.

Invested as this Board is with legislative, executive, and judicial powers, the responsibility for the exercise of all three of these powers has tended to make us move with the utmost conservatism on those questions especially committed to this department of the Government. While these powers are committed in trust for our execution, we have felt compelled to assume and occupy the broad ground which the common law prescribes for the regulation of carriers' charges, viz.: are the fares and rates, all things considered, just and reasonable?

We are not unmindful of the fact that the organic law prescribes an inflexible rule, regardless of conditions and circumstances, for the government of our actions. We may, in the exercise of our legislative powers, establish fares and rates; we may, in our judicial capacity, determine whether these rates are just and reasonable, and if found to be so, we may see that they are enforced. But the judicial powers are greater, and include the other two prerogatives; hence are to be exercised judicially. The Board can determine questions by the inflexible rules laid down, or it can resolve itself into a common law Court and adjudicate on the basis of the common law. The latter, while it is not laid down in our statutory Code, is, nevertheless, to be found in the great volume of five hundred years of commercial experience and advancing civilization, which has acquired the force of statutory enactments, and no Court will ignore it in adjudicating commercial questions. Another reason why the Board should be guided by common law practice in adjudicating upon questions arising between shippers and carriers, is that its decisions are to be deemed final and conclusive.

In this regard it is the Court of last resort in so far as our State Courts are concerned. The question as to whether appeals to the domain of the Federal Courts could be maintained will not be discussed here. In case, however, such appeals should be taken, the decisions of this Board should be of such a character as to merit approval therein.

Above all such considerations, however, all the facts, conditions, and circumstances should be simply and clearly stated, so that the shipper and the traveler may understand that their transactions with carriers are not based upon inflexible, statutory enactments, but upon common usages and customs practiced throughout the civilized world.

The experience of the most profound thinkers in this country and in Europe, who have investigated and studied up all the peculiar and exceptional characteristics of railroad transportation, is, that the establishment of inflexible relations between shipper and carrier is impracticable, and will work only injury to both. Every analytical mind that attempts a solution of the transportation problem, finds an expansive subject, and becomes astonished at its former restricted views, and would shrink from the responsibility of enforcing them on the commerce of the country. The conclusion is inevitable that

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their enforcement would upset commercial values, destroy confidence, and result disastrously.

The true policy in this country is found in giving the greatest possible freedom to individual action, consistent with the rights of others equally free. The stability of society and protection to life and property; the development of commerce; the promotion of art and science; the attainment of a higher civilization; all find their solution in the theory of individual freedom. Commercial freedom is one phase of this theory, and under it the world's history records no instance of material prosperity equaling ours.

These developing forces are still going on. New channels of commerce are being opened, superseding those of our fathers. New industries are springing into existence, in response to the demands of these natural forces, to be succeeded by others, newer and better. In the changes which are being wrought in the process of commercial and industrial development, there will be, no doubt, in the future, as there have been in the past, individual and local hardships growing out of the changes in the channels of commerce. But shall this process of commercial development be arrested? Even the popular voice, when brought face to face with these changes, and the consequences of arresting them, becomes conservative and yields to the logic of passing events.

No local or individual interest is so great as that of the whole people, and it has no right to demand the arrest of these forces of commercial and industrial development which are superior to it and which contribute more largely to human progress. This should be the political and commercial creed of all parties. From this standpoint we shall endeavor to discuss the transportation problem as it presents itself to us in this State.

The Constitution has empowered us to regulate the rates of all transportation companies or individuals engaged in the business of transportation, and the rates established by us are to be deemed conclusively just and reasonable. How can this Board then, invested as it is with unrestricted power, so exercise it as to subserve the best interests of the whole people? Whether it shall be by a judicious exercise of the power conferred, by considering all the natural and artificial conditions necessarily incident to the problem, or by an inflexible unyielding rule, regardless of these conditions, is the question.

As common carriers, the transportation agencies of the State are entitled to a just and reasonable compensation for their services, and at the same time, that they should treat all shippers with equality under like circumstances there is room for no two opinions. Yet shippers at interior points sometimes complain that the railroad companies discriminate against them unjustly. If, on investigation, we had found discriminations that natural conditions did not compel the carrier to make, we should have deemed it our imperative duty to correct it by exercising, if necessary, all the power conferred upon this Board by the organic law.

But we have not yielded to popular clamor in treating questions of this kind. We have followed the course mapped out for us by our predecessors, who, though not invested with any power to arbitrarily settle and determine controversies between shipper and carrier, yet found amicable intervention instead of force to be the most effectual

agent in settling them. To sustain our position we quote from the first report of our predecessors:

In October, 1876, we issued a circular, which was addressed to many hundred citizens in various parts of the State, whom we deemed likely to be able to furnish us with information or suggestions of value in connection with the subject of railroad transportation. A copy of it is as follows:

"SACRAMENTO, October, 1876.

"Among the principal objects proposed by the Legislature in creating the Board of Transportation Commissioners, is the compilation of facts and statistics connected with the building and operation of railroads in this State, and also the investigation of their management, especially as it affects the interests of their patrons and the public generally.

"It is believed that an impartial investigation of this subject will result in substantial advantage to all concerned, and to this end this Board desires to receive information, and suggestions, and statements from all who are interested.

"As your position has probably led you to give more than usual attention to the subject, there may be matters to which, in your opinion, the attention of the Board should be called; in which event, it is requested that you will communicate them to this Board in writing.

"By order of the Board.

"WALTER M. PHILLIPS, Secretary."

This was transmitted to Supervisors, county officers, members and ex-members of the Legislature, Judges, prominent merchants, storekeepers, editors, hotel keepers, patrons of husbandry, etc., and it led to some valuable communications, although not to contributions of public opinion, or information on the subject, as full or extensive as we might have reasonably looked for.

We have deemed it our duty to visit and inspect, so far as such inspection can be made, *in transitu*, every part of every railroad in the State, in order to acquaint ourselves, so far as possible, with the circumstances, local connections, situation, and condition of the various roads.

Without entering into unnecessary detail on this subject, we observe that generally the railroads of the State are in good order and their management wise and economical, and conducted with a view to public convenience. The older portions of the Central Pacific and Southern Pacific Roads are being gradually relaid with steel rails, of which material the new roads are generally built. In the bridges, viaducts, trestles, etc., no defects were observed. During the past year the high trestles on the Central Pacific have been filled in, and other structures of a temporary character are being replaced by permanent ones. Some parts of the engineering on the Southern Pacific Road have excited very general admiration abroad as well as here. The single exception to these favorable remarks is the California Pacific Road, the rails of which are much worn, laid in old-fashioned chair joints, and the track poorly surfaced and ballasted, and in all things quite below the standard of a first-class road.

The single exception was remedied as soon as was possible thereafter. Of complaints, our experience is well set forth by our predecessors as follows:

Some few complaints of inequality or unfairness of charges, and of lack of proper attention to the public convenience in the classification of goods and the charges for freight, have reached us. These have, in all cases, been first referred to the companies concerned for remedy or explanation, and in every instance, so far, the complaints have been responded to as promptly as if we possessed legal authority to command their answers or enforce redress. Our effort, in all such cases, has been, by amicable interposition between the parties, to effect the reform of any abuse found to exist, or to satisfy the complaining parties of their error, if it were such. So far, our limited experience tends to confirm that of the Massachusetts Commissioners, who have found such amicable interposition almost invariably successful. Some of the complaints made to us proved to be without foundation, or made on a misapprehension of facts. In others, reasons for the course pursued have been adduced, not before known to the parties complaining.

The power of the present Board over transportation companies within the State is absolute, and if exercised arbitrarily, regardless of vested rights, would produce unmeasured injury to the productive industries. But if exercised judiciously, it may be productive of great benefit to them, by bringing the producer and the carrier nearer together. Our action has thus far been in keeping with the policy of our predecessors as to the exercise of this power, as will appear by the following extract:

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But power is necessarily attended with corresponding responsibility and duty. Our railroads have been built and are owned by individuals whose property is as sacredly under the protection of the law as that of any other individual's. The Legislature cannot, without making just compensation, directly take from them their stock in the roads, nor the roads themselves. It has, indeed, the power, indirectly, to render the stock and the roads valueless to their owners by hostile legislation, but the exercise of such power would be *atrocious tyranny*. It is believed by many that the undisputed recognition of the power on the one hand and the responsibility for its exercise on the other, joined with constant supervision of the management, will probably prove an adequate protection to the public against abuses of the railroad companies and to the companies against unjust legislation. Those who would most earnestly advocate even the harsh exercise of a power, the existence of which was challenged, will feel an increased responsibility for its exercise when its unlimited existence is conceded, and public supervision has been found, so far, the most efficient corrective of abuses. "A good government," says Chief Justice Waite, in discussing the leading Granger case, "never puts forth its extraordinary powers except under circumstances which require it. That government is the best which, while performing all its duties, interferes the least with the lawful pursuits of its people."

Thus far we have, in the discharge of our official duties, endeavored to be governed by the experience had in other States and countries, as well as by the axiom of Chief Justice Waite, viz.: "that government is the best which, while performing all its duties, interferes the least with the lawful pursuits of the people."

Of those who have studied the relations of carrier and shipper in the United States most from a public standpoint, we may cite the Honorable Charles Francis Adams, of Massachusetts. Perhaps no person living, whose life has not been devoted solely to the detailed workings of railroad traffic, so thoroughly understands the subject in all its phases. Fifteen years study of the problem has led Mr. Adams to the conclusion that "force bills" and "inflexible statutory regulations," instead of harmonizing the relations between carrier and shipper, but increase antagonisms. The idea prevails to some extent in this State that it is the duty of this Commission to establish uniform mileage rates on all classes of freightable commodities, and a uniform mileage rate for passengers, and also a uniform classification of freight of all kinds, regardless of the value of the articles carried. We shall discuss these subjects fully, because, however unreasonable the position taken may be, the effect is to create a public sentiment directly antagonistic to the public welfare. Therefore, in order to counteract this influence, we shall set forth facts and adduce reasons for the position we shall take, going to prove that the system of establishing commercial relations which prevails in the most advanced States and nations is not so defective as to require the adoption of the radical measures insisted upon by some public men. The position we will maintain is that in the adjustment of transportion rates the charges for carriage should be distributed, where they "can be best borne." We will not impugn the motives of any public man or respectable newspaper who takes the position that the charges for carriage should be fixed on the basis of "cost of service;" but we will endeavor to prove that the latter method is impracticable, because it is impossible for any one to estimate accurately such cost. There are many reasons why the cost of any particular service cannot be ascertained in advance in a business that varies from week to week; and farther, because by far the greater and more important expenses of railroad management do not vary with the amount of service rendered, but are of the nature of what are called fixed charges. These expenses go on, whether the traffic is great or small. No one yet has established a rule which will distribute these expenses over the different classes of business.

Colonel Fink and Mr. Blanchard have given this subject as careful consideration as any living men, and they have not been able to do more than to approximate it. Every practical business man will tell you that he cannot distribute accurately the cost of handling and disposing of a promiscuous stock of goods on any other than an *ad valorem* basis. The cost of selling fifty dollars worth of prints might be more than the cost of selling one thousand dollars worth of silks. Hence the impossibility of ascertaining the cost of any special service when it varies as it does in any commercial pursuit. Even if it could be ascertained, and charges regulated accordingly, the most disastrous results to business would follow, because there could not be a judicious classification so as to distribute the cost on those classes of trafic which are best able to bear it. Applied to transportation traffic, on the basis of cost of service, grain, lumber, charcoal, wood, groceries, drygoods, chemicals, and all costly articles, would pay about the same rate per hundred pounds per mile, and that rate would have to be at least the average rate now charged upon the different classes of freight. The higher classes of freight would be greatly lowered, and the low classes would have to be materially raised, so as to make a general average equaling the present average rates. The result would be that many articles which are now moved long distances could not be moved at all, and the development of many struggling industries would be arrested.

No one will dispute the proposition that the whole volume of business done must maintain the road, pay interest upon its liabilities, and finally pay them off. In order that this may be done; that the business of the country may flourish; that the products at distant points may be marketed, the cost of maintaining the road must be distributed where "*it can be best borne.*" This principle is not the result of the resolution of a Board of Directors, or the orders of the Presidents of the railroads, but is the result of the active forces and necessities of commerce. The very first object of a high maximum, is to enable the managers of railroads to place the burden of maintenance upon the traffic best able to bear it, and this principle can by no fair means be distorted into the popular cry of "all that the traffic will bear." Because that a ton of thirty dollar ore is carried a thousand miles for ten dollars, and a ton of three hundred dollar ore is charged thirty dollars, there is no warrant for saying the carrier charges "all that the traffic will bear;" nor is there any warrant for saying that it constitutes an unjust discrimination. The conditions are entirely different. The thirty dollar ores in Nevada, Arizona, Utah, and Colorado are in the ratio of twenty to one of the three hundred dollar ores, and while the actual cost of handling and moving a ton of the latter is no more than that of a ton of the former, yet the consumption of supplies as return freight, which can bear a high rate for the use of the men employed in producing the poorer qualities of ores, is in the same ratio. This principle applied to those Territories has made them prosperous and enterprising communities. We are not without concurring opinions on this principle, as the following extracts from our able predecessors will prove:

The value to the customer of the service rendered him by the transportation, though not a proper standard of charge, is yet an element necessary to be considered in establishing rates. It naturally forms the limit beyond which he cannot afford to pay; and as all transportation

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for profit, to be successful, must be beneficial to both parties, the rates must be such as the customer can afford to pay, and the carrier to accept.

* * * * * * * * * * * *

A proposition to fix by law the rate of freight on each commodity transported, is a proposal to determine the proportion in which the difference in terminal values shall be divided between the producer and the carrier, and to value the share allotted to the latter in advance. But difference of terminal values is so utterly different in the case of the innumerable variety of different commodities carried; so varies, even in the case of the same commodity, with season, place, and circumstance; is so dependent, in many instances, on the course of market values abroad, which fluctuate even from day to day, that it is simply impossible to frame a tariff based on such division which will not prove either ineffectual on the one hand or unjust on the other.

The problem presented for solution may be illustrated by what may at any time occur in an ordinary railroad depot. There may be a half-dozen packages of the same weight and bulk, with exterior marks of difference, to be shipped in the same car, and for the same distance. What, if any, are the reasons justifying a discrimination of charges? And what the elements controlling the amount of charge in each case?

A consideration of the elements influencing and governing railroad tariffs, will show that the charges are not and cannot be regulated on the principle of a fixed percentage of profit on the cost of the service, or on the capital invested, and that a just discrimination of charges, according to the value of the service rendered, and the ability or will of the public to pay, is a necessary and ruling feature of all transportation for profit, and is founded on the common law rights and mutual interests of both the carrier and the public.

By the common law, the carrier is entitled to a reasonable compensation, not for the cost of the services, but for the services rendered, and to the use of all legitimate means necessary for the attainment of such compensation, and the public to transportation for persons and property, at reasonable rates, and without unjust discrimination.

As transportation for profit cannot be conducted at a loss to either party, the carrier cannot be forced to carry at less than cost, but so long as he can realize any profit, however small, from the service, he has not the right to deprive the public of transportation by prohibitory rates. If the charges are greater than the goods can bear, or the passengers can pay, the carrier deprives himself of the profits which he seeks, and the public of the transportation to which it is entitled, and it is, therefore, necessary to the interests of both parties, that the charges should be based rather on the ability of the public to pay than on the cost of the service.

LIMITATION OF DIVIDENDS.

As much has been written upon the subject of reducing fares and rates by a limitation of dividends on the capital stock, we cite the following opinions taken from the report of our predecessors touching that subject, as well as the testimony taken by the United States Senate Committee on Transportation to the Seaboard:

CAPITAL DOES NOT INFLUENCE CHARGES.

The capital invested in railroad enterprises does not, and should not, influence the charges for transportation. The investments in farms and property along the line of a road are as necessary to the success and continuance of the transportation business as the construction of the road itself, and one investment is as much entitled to a profit as the other. All companies realize the maximum profit which is attainable, having due regard to their ultimate interests, whether the capital be large or small. If the dividends should be limited by law, it would be impossible for a company to regulate its tariffs so as to produce the exact amount of dividends prescribed; and rather than risk falling below that amount, they would charge as before, and dispose of the surplus as the law might provide.

THE COST OF CARRIAGE EXERCISES BUT A LIMITED INFLUENCE ON CHARGES.

The cost of carriage is not taken into consideration in devising a tariff of charges, except as indicating the minimum charge which the company can make. The cost, in this case, is not the average per ton or passenger mile, derived from the accounts of the company, but the additional cost to which the company is subjected by the performance of the service, and may be best determined by the minimum charge made on the same road in like circumstances. It is a matter of experience and judgment, and not of calculation.

It is to the interest both of carriers and producers that charges should be based on the value of the service, or on what property can bear, and therefore what may be a reasonable rate of charge for one class of goods may be extortionate in another, even when the cost of carriage and other circumstances are the same. Thus a charge of three cents per ton per mile may be reasonable in one case, and one cent per ton per mile extortionate in another.

THE CAPITAL INVESTED NOT AN ELEMENT INFLUENCING TARIFFS.

The capital invested, and the interest and dividends on stock and debts, exercise no influence whatever on the charges of any railroad company. All companies, as organizations for profit, realize always the maximum profit attainable, and do not and cannot regulate their charges with a view of obtaining a certain fixed profit. To calculate the effect of any given tariff of charges on the aggregate profit for any given period in advance, there must be known what, during that period, will be the volume of each class of freight and passengers, the market values of the freight at home and foreign markets, and the earnings and operating expenses of the road. It would be as impossible to compel any company to arrange their charges so as to produce a fixed profit, as to make the number of customers of a hackman depend on the cost of his equipage. If, however, it should be provided that the surplus, above a certain percentage of profit on the capital, should accrue to the public, or be disposed of as may be provided by law, no company would risk falling below the profit allowed, and would therefore continue to charge all they could obtain.

In this connection may be cited the testimony before the United States Senate Committee on Transportation to the Seaboard, of Mr. Worcester, Secretary to the New York Central and Hudson River Railroad Company, and Acting Treasurer of the Lake Shore and Michigan Southern Railway. The testimony is as follows:

"It is sometimes supposed that the rates are made with reference to the revenue to be paid in on the capital, or on the investment in the enterprise, or on watered stock, as the present term is, and that if a railroad can make 'terminal charges,' or 'transfer charges,' or can invent anything of that kind, that is made an excuse for higher rates. Nothing of the kind ever obtains; rates never have the slightest reference to what the capital of the company is, or how large the investment they may desire to pay on.

"The only question is what the property will bear, keeping in view always the future development of business, and the elements of prosperity involved in such development. What can be got upon this basis has to work out its own results, as regards any or all returns to stock or capital.

"The amount of capital has nothing whatever to do with charges—the amount taken is one thing, a thing by itself, and is what the business will bear. There never was such a thing heard of as a company that increased its capital stock as an excuse or occasion for putting up rates. If the capital were doubled, and an attempt should be made to double the rates so as to pay on the doubled capital the same percentage of dividend that was previously paid, the diminution of the business would probably make the result a less aggregate compensation than before.

"The ultimate element of prosperity in any kind of business is this: The maximum volume at the maximum price, and this principle is of absolutely universal application."

On the whole, therefore, while we think the public complaint as to existing railroad charges well founded as to some of the roads, we are forced to conclude that a general law classifying merchandise and prescribing rates of freight thereon, is not, at present, a practicable remedy for the evil. It is also to be considered that such a law could not do more than to prescribe a maximum rate on each class of freight. Embracing, as it must, an almost unlimited variety of commodities, it is not within the range of probabilitiy that it should fail to operate harshly upon some of the roads or parties affected, unless the maximum were left so high as to be ineffectual as a restraint upon charges; hence, if enacted, there could be no hope of its permanence. At every succeeding session, the Legislature would be wearied with applications to change the classification of this or that commodity, or to establish new classes of unenumerated ones, or to alter rates. Amendments to the Freight and Fare Act would occur annually in the statute book with the regularity of amendments to the Practice Act.

The general objection to laws which fix an arbitrary price at which one man shall sell his merchandise or his services to another, is also of the gravest kind. Such enactments are generally in violation of sound principles of government, as recognized by all enlightened publicists, are retrograde by several centuries in their character, essentially tyrannical in their nature, and only justifiable under the pressure of some public emergency, such as war, fire, famine, or pestilence, when all private rights have to give way to public necessity.

We are of opinion that the reduction of railroad charges to the lowest point consistent with a fair remuneration for the capital and labor employed, can be gradually accomplished by other means, less sudden and violent, but probably more permanent in character.

These opinions on the subjects to which they relate are so well expressed we insert them all here, reserving our own deduction for a subsequent part of our report.

ANTAGONISM BETWEEN PRODUCTION AND TRANSPORTATION.

The alleged antagonism at the present time in this State between production and transportation is not real. In fact, it bears no semblance of reality. Production and transportation are as dependent on each other as the products of the land are dependent upon rain

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and sunshine. Each is dependent upon the other for profit. Without production there could be no transportation, and without transportation there could be no way of disposing of the surplus products of the State. Self-interest will dictate to both the producer and carrier that mutual relations, which alone can promote the general welfare and general prosperity, must be established between them. By a judicious classification of freightable commodities, ad valorem, so as to realize a general average sufficient to maintain and operate the roads and meet the obligations of transportation agencies, while at the same time enabling the producer of cheap and bulky commodities to market them at rates far below the average, cannot but promote and conserve the greatest good to the whole people. If the transportation problem is so little understood as to warrant the insinuation of such antagonism, the flourishing condition of all our productive industries at the present time, should cause thinking men to reflect before inaugurating a conflict between interests so mutually dependent upon each other. In view of these and many other reasons which might be cited, we here assert that the principle upon which fares and rates should be adjusted is, that the rate "should bear a reasonable relation to the value of the service rendered."

Farther on we will devote more space to the principle of classification, inflexible tariff, "public use" of private property, and the extent thereof; discrimination, special rates, etc., exemplifying these subjects by illustrations and facts.

At this point a brief review of the action of other States and countries may serve to prove that railroad history is no exception to the general aphorism "that history repeats itself."

The railroad system of England, being the first to assume positive character, was the first to attract governmental attention. At first it was, by many, looked upon as a "public highway," but the active forces of its development soon concentrated the most powerful focus of English thought upon it, and the partisans of the "King's highway" theory, as it was termed, soon found their adherents rapidly diminishing. This did not occur, however, until numberless parliamentary attempts had been made at regulation. Each subsequent attempt to treat the railroads as "public highways," but disclosed the radical difference between a road over which every person could run his own conveyance and carry passengers and freight for hire, and one over which none but the owners who had built and equipped it for the purpose of carrying other persons and property than their own for hire. There would have been some analogy to the "King's highway" if the King owned the roadway and had furnished the vehicles, and had done all the carrying upon it. The railroad was owned by a private corporation, whose object was to furnish a cheaper and more rapid transportation for both persons and property, for hire, over their own road. The experiment, although at first there were few who were sanguine of success, rapidly gained favor with the producing and traveling public; yet at the same time it was creating a feeling of distrust of its growing power over industries near or remotely dependent upon the system for their successful prosecution. This distrust naturally gave rise to parliamentary legislation, and, as Mr. Adams says: "After more than forty years of blundering it was there at last realized in 1872 that the railroad was a thing *sui generis;* a vast and formative influence, as well as a material formative power, the growth of which was to be curiously watched in the expectation that in due

time it would develop some phase which again would call forth a corresponding development in the machinery of government through which its political and economical relations with the community would be finally established on some rational and permanent basis." This basis was only reached in England when her statesmen had learned the difference between a "highway" owned by the public and a railway owned by private individuals.

In asserting private ownership of railways, we shall not claim that there is not a "use" in them in which the public have an interest. What we desire is to assert, and emphasize the assertion, that the property of railroad companies is as much the private property of the stockholders as bank or insurance stocks. The assertion from the rostrum and in publications that railroads are "public highways," in the same sense as when applied to ordinary roads, has had quite as much to do in misleading the people as to the ownership of railroads as any other cause, and the sooner the public mind is disabused upon this question, the better it will be for both the producer and the carrier. "The old analogy suggested by the Duke of Wellington, 'as mischievous as it is false,' still maintains a strong hold upon the legislative mind and belittles a great question." It took, according to Mr. Adams, conservative old England as long to emerge from the wilderness of doubt and uncertainty as to what the natural forces put in operation by her railroad system would develop, as it did the children of Israel to grope their way out of the wilderness into which they were led for their murmuring and unbelief. At last daylight dawned upon the sturdy Englishman, whose native force has girdled the globe with its glorious civilization; and if the later reports of the Royal Commission are any guide, there is little or no friction between production and transportation in that country. At every step in the solution of the problem it has been the remote and not the near difficulties that seemed most formidable. When reached a remedy was always found. Its railroad system partakes in a measure of the character of the government under which it has developed. Freedom of individual action in matters economic, characterize England more than that of any of the hereditary governments of Europe, and it is this that makes her the most powerful nation on earth.

We might detail the railroad systems of Belgium, France, and Germany, but we should get farther away from the "problem" as it presents itself in our own country, as those countries differ in their character and internal administration from ours. We may say, in passing, that in Belgium, although the Government owns and operates over sixty per cent of its railroads, it is generally conceded that the management of the private roads is equal if not superior to those owned by the Government, in economy and efficiency. This, too, when the Government had the selection of the territory through which to lay out its roads. * * *

We may also say that in establishing fares and rates, the Belgian Government adopts the same system that private roads adopt, and when competition is sharp with private roads it adopts commercial principles, by making special rates, to meet competition either by rail or water, or divides the traffic with its competitors. While its system is a part of the Government, in the details of working its traffic it is governed by the inexorable logic of commercial law.

The French railroad system, according to Mr. C. F. Adams, in its

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design and management is opposite that of England and the United States. Under the Empire a plan to divide up the country into six grand divisions and apportion it among as many railroad companies, neither of which was to interfere or compete with the other, was consummated. The interest of the Government in the roads was the inspiring motive, together with that of the ultimate object of their acquisition. At the end of ninety-nine years the "concession" expires, and prior to that time it is optional with the Government to take them at the average profits of the lines during seven years previous to the taking. In working the traffic the companies establish the rates, and when questions arise they are settled by a Board of Arbitration, with the right of appeal to the Central Railroad Commission. Competition is virtually prohibited, thus suppressing all ambition to excellence in the management. But the French people are not so wedded to ancient custom as not to be susceptible to the natural forces at work in other nations, and with its political revolutions will be revolutionized the economic features in her railroad system. In fact few persons understand the economic principles of managing railroads better than M. de la Gournerie, Inspector General of the French Corps of Bridges and Highways, whose reputation is not confined to France. But we only allude to the French system here to show what has been the extent of government interference with the details of working the traffic in other countries than our own.

In Germany, where the government is everything and the subject a mere convenience, steps have been taken for the acquisition of all the railroads by the Government. The philosophic German mind, if untrammeled, would no doubt work out a system of railway management which might be emulated by more liberal nations, but repression of individual freedom is traditional with the rules of that military cursed country, and while it remains so, we need not expect to draw inspiration from such a source. That nation is what its rules make it. Our own is what the people make it, and to it we return from our diversion, and will try and give an impartial sketch of the agitation of the question of regulating the railroads in the various States of the Union which have attempted it. From their experiences, as we have learned them from public reports, judicial decisions, and newspaper discussions, we have endeavored to deduce a line of policy to recommend for adoption in this, the last of the States in which the "agitation" of the question seems to have been renewed.

We are not unmindful of the fact that considerable discussion has been going on in New York, during the past year, growing out of the Western traffic terminating on the Atlantic seaboard, which has resulted, in the State of New York, in creating a Commission. The action of the Chamber of Commerce of New York City has brought about a great deal of discussion through the newspapers, magazines, essays, and reviews, by some of the most profound economic minds in the country. These essays and reviews have been the means of throwing much light upon the question of transportation. Without further reference to them here, we will proceed with our references to the action of different States in their dealings with the railroad transportation problem.

In New York a Board of Railroad Commissioners was appointed as early as 1855. This Board made a report at a time when the management of railroads had not attained as high a standard as it has at this time. Subsequently, we believe in 1867, the Commission was abolished on their own recommendation. The Commission had no power to establish fares and rates. The Acts of incorporation prescribed, for the New York railroads, three cents a mile for passengers, except on the New York Central, which is limited to two cents, and two and one half cents on the Hudson River Railroad in Winter, and two cents in Summer. No statutory limitations are imposed as to freight charges. In practice, the limitations on passengers do not act as any restraint upon the companies, as the average does not equal the legal rates.

In Connecticut a Board of three Commissioners exercise but little control over the railroad companies, except to report as to their safety and public convenience. No power to establish rates is conferred upon the Board, nor has the Legislature established any schedule of rates for the roads. Returns are made to the Commissioners by the railroad companies, annually, showing their operations and management.

In Massachusetts a Board of Railroad Commissioners was created in the year 1869. The duty of the Board is to examine into the management and operation of the railroads of the State; see to the enforcement of the existing laws, and report their investigations and recommendations to the Legislature. The reports of the Massachusetts Board have done more, perhaps, than all others to educate, not only shippers and travelers, but the carriers, as to the rights of the former and the duties of the latter. With that good-natured persistency characteristic of New Englanders, the Board has convinced the managers of the railroads of that State, that there should be no acts done by a railroad company that would not bear the light of publicity; and while the managers at first thought they had some secrets in their transactions, yet when they were made to see a crooked transaction in the light thrown on it by a public inspector, it became offensive even to themselves. The Commissioners of that State have succeeded in procuring accurate returns from the companies as to their financial condition, whereby stockholders are enabled to know whether their interests are properly guarded or not. Railroad securities in the Eastern States being favorite investments for savings and trust funds, the publicity obtained through the returns to the Commissioners enable investors to act intelligently. Uniformity in keeping their accounts is also secured.

It will be observed that in neither of the States above named has been established inflexible rates, so as to affect their actual rates charged, and the credit of the companies was in no way affected by the powers exercised by the Commissions.

In the State of Minnesota, as the railroads extended from the centers of population toward the interior and sparsely settled districts, complaints of inequality in rates began to be made, and for several years the question was debated with little regard to the conditions which were involved. The dissatisfaction culminated in 1871, when a law was passed establishing a tariff of rates, "also creating the office of Railroad Commissioner." This was superseded in 1874 by an Act which provided for the appointment, by the Governor, of a Board of three Commissioners for two years, with power to acquaint themselves with the circumstances of the various roads and to insti-

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tute suits to compel obedience to the laws. They were also empowered to establish fares and rates, and the rules of evidence was so changed as to throw the burden of proof upon the companies in case of violations of the rules and tariffs. The general rules adopted with respect to rates were as follows:

(*a*) In all cases a less charge for a shorter than a longer distance by the same train and in the same direction.
(*b*) No greater charge for handling freight at one station than at another.
(*c*) No greater charge for given distance on one part of the road, than for an equal distance in the same direction on another part of the road.
(*d*) No greater charge for handling freight belonging to one person than to another person at the same station.
(*e*) No greater charge for transporting freight for one person than for another, from the same point, in the same direction and the same distance.
(*f*) No greater charge for hauling railroad cars for one person for a less distance than at the same time charged for such transportation for another person over a greater distance in the same direction.
(*g*) No greater charge for hauling railroad cars from the same point in the same direction and equal distance for one person than for another.
The only exceptions to these rules were in the cases of commutation and excursion tickets.

The railroad companies adopted the schedules prescribed by the Commissioners. Complaints were soon heard, however, of unjust discrimination in various parts of the State; that the very uniformity of the plan worked unjustly against certain parts of the same roads and the weaker roads. The increase in the rates over the thickly settled portion of the roads, where the natural advantages of location entitled them to lower rates, caused the most widespread dissatisfaction.

It seems that in Minnesota, the enforcement of a statute which contravened the principle which economic science lays down, was the short road to an adjustment of the railroad problem in that State.

The law, which had worked only injury thus far, was repealed in March, 1875, and the Governor, in his message to the Legislature in that year, stated that "the evils resulting from letting the railroads alone have scarcely any present existence here." A new law was passed, creating the office of Commissioner, to be elected by the people, whose duties related mainly to the collection of statistical and other information. "Practically the railroad question has been remitted to common law proceedings, and the functions of the Commissioner are confined to the collection and compilation of statistics." * * *

Under the stimulus of individual freedom applied to her railroad system, Minnesota has advanced in industrial development with rapid strides. There is little antagonism between shipper and carrier at present.

The question of the regulation of railroad rates in Illinois commenced much earlier than in any of the Western States. Having few interior navigable waters, the producer, in most cases, was dependent upon railroad transportation for reaching the principal local markets. Ignorance of economic law by railroad managers, created much friction between the producer and the carrier by rail. This antagonism culminated in 1870, in the adoption of a new Constitution, which declared the railroads to be "public highways," and imposing upon the Legislature the duty of establishing reasonable maxima rates for railroad transportation. It also conferred upon the Legislature the "power to make laws for the purpose of prohibiting unjust discriminations." The Legislature, in 1871, passed an

Act to prevent any discriminations by the different railroads of the State for the transportation of freight. The roads were classified according to their earnings; the rates actually charged in 1870 being the standard. A Board of Commissioners was created, charged with the duty of carrying the provisions of the law into effect. This law was entirely disregarded by the railroad companies of the State, and coming before the Supreme Court of the State, on appeal, it was pronounced invalid, upon the ground that it made "no proper distinction between just and unjust discriminations." This opinion of the Illinois Supreme Court, which was elected during the Granger excitement, possesses emphatic significance at the present time, when it is important to know where public control over private property ceases and private rights commence.

Although the statutes of the State of Illinois prescribe what shall be deemed prima facie evidence of "extortion" and "unjust discrimination," yet the Courts, in determining all such complaints, adopt the common law principle, viz.: that there must be exercised a judicious distinction as to what is a "just and unjust discrimination," and that the final determination of the question of what is "just and reasonable" is purely a judicial question.

Perhaps no State has attained greater notoriety through inflexible regulations of railroad charges than the State of Wisconsin. We have not space in this report to traverse all the various phases it assumed. One of the incidents growing out of the action of the State in granting public aid to encourage the investment of capital in railroads was, that as the people had asked authority to tax themselves to obtain railroad facilities in advance of population and industrial development, they in some unexplainable manner had acquired an interest different from that "public use" which obtains to capital ordinarily invested in railways, steamboats, and other carrying facilities for hire. This sentiment prevails to some extent even at this time.

The people of Wisconsin, on realizing the fact that the aid given to encourage the construction of certain railroads did not give them any legal control or rights over them that did not pertain to any road, whether they had aided in its construction or not, became intensely excited, and to even up, they resolved to restrict their charges. The dissatisfaction culminated in the passage of the so called "Potter law," said to be the most stringent legislative enactment which has yet been enacted in this country. There can be no doubt of there being good cause for the complaints made in that State. The diversion of the aid donated by the people, and the proceeds of the land grants, to other than the objects for which they were denoted, aroused the most intense feeling of hostility to the railroad management. It was an inflexible and unchangeable statutory regulation, regardless of commercial law, or the ever varying conditions and fluctuations in trade alone, that would appease them. It made no difference whether the distance was one mile or a hundred. It treated connecting lines as continuous, but made no provision for division of earnings. The Commissioners who were to enforce it set forth in their report to the Legislature the various inconsistencies of the law. They also reached the conclusion, after a thorough study of the question, as nearly every Railroad Commission has reached, that inflexible statutory regula-

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tions of common carriers results in injury to both the producer and the carrier. In their report in 1874 they say:

> Surely there is no apology for the exercise, on the part of the State, of any power over corporations which can be as safely and as wisely exercised by the corporations themselves. There is no principle of American Government so thoroughly or so properly established as that which limits the province of legislation, at all times and under all circumstances, to enactments for the general good, and which denies to Government the right or the duty of unnecessary interference with private or public enterprise.

The law has since been modified so as to restore harmony between the parties most interested.

The information obtained through the investigations of the Commissioners, has tended to correct the erroneous views regarding transportation which had been entertained, and there has been shown a disposition by railroad companies to comply with the legitimate demands of the people with regard to their commercial and industrial interests.

Michigan established a Railroad Commission in 1873. It was invested with power to investigate, and give publicity to its investigations, and to obtain such other information as would promote the interests of the "railroads and the public." Like all transportation commissions, whether invested with power to establish fares and rates or not, he found an insurmountable difficulty in establishing an inflexible relation between production and transportation. The market values of commodities transported, and volume of business, which was ever varying, and competition, were some of the difficulties which were a bar to such legislation. In consideration of these and other facts, the Commissioner, in his subsequent reports, has expressed his opinion that the State should rather seek to develop its railroad system by a liberal policy than that of repression; and there has never been adopted any law limiting freight charges in the State. The supervision exercised in the discharge of his duties has tended to prevent unjust discrimination and extortion, and has been the means also of aiding in adjusting differences between shippers and the railroad companies. Rates have been steadily reduced on all the roads as traffic has increased.

Ohio has never pursued a radical policy towards her transportation companies. A Commissioner, charged with similar duties to those of the State of Michigan, is appointed by the Governor. Apparently there is little cause of complaint against the transportation companies of Ohio. The policy pursued by the Massachusetts Commission has worked well in that State.

In Iowa the influence reflected from Wisconsin in her contest for supremacy with the railroad companies, created much interest for five or six years. Complaints of exorbitant charges and unjust discriminations, were as loud as in her sister State to the north of her.

One of the chief causes of the complaints was the alleged unjust discriminations made between shippers. The published rates of some of the companies, are said to have afforded no indication of the actual rates charged, except to occasional shippers. Special rates, it was alleged, were made forty per cent below the published rates. Such practices were calculated to paralyze legitimate trade, because so directly opposed to the principles of law in relation to the duties of common carriers.

In 1874 the Legislature passed a railroad tariff law, establishing the maximum rates for fare and freight, and prohibiting unjust discriminations. Like most of the laws establishing inflexible rates for railroad companies, the law of 1874 was very crude, and from the fact that most of roads operating in the State of Iowa were owned and operated in other States, the law could not affect them except on the local traffic, which was only from fifteen to twenty per cent of the whole traffic. So antagonistic became the people to regulations they deemed injurious to their State, that it has been alleged that they would not assist the railroad companies in subduing fires if only railroad property was exposed. Much of this hostility arose from the discriminations which the law itself produced. A thorough investigation of the whole subject revealed the defects in the law. This led to subsequent modifications, designed to correct the mistakes of inexperience in railroad legislation. The question now seems settled on a permanent basis.

The causes that operated in Illinois, Wisconsin, and Iowa, reflected their influence to the State of Missouri, and as the "Potter law," so called, had been pronounced a panacea for all the ills that ignorance or cupidity in railroad management had engendered, this law was adopted almost entire. The Act of 1875 provided for the appointment of three Commissioners, charged with the duty of annually reporting to the Legislature in regard to the economic, commercial, and financial interest of the various roads of the State; of attending to the enforcement of the laws with reference to matters of safety and police, and with the duty of prosecuting all violations of the State laws in regard to railroads. The Commissioners, like those of Wisconsin, Illinois, and Iowa, soon discovered the most glaring defects in the law, the failure to provide the proper means for its enforcement being the least. It has proved as ineffectual in Missouri as in the adjacent States.

Maine, New Hampshire, Vermont, Pennsylvania, Georgia, and a few other States, have created the office of Railroad Commissioners, but with one or two exceptions, no power to establish fares and rates has been conferred. They still recognize as applicable to common carriers the old common law rule, that the charges must be just to the carrier and reasonable to the shipper.

Having very briefly reviewed the action of several of the States in their efforts at government control of transportation by railroads, we have deduced from their experience a line of conduct for the government of our actions towards the transportation companies of this State. In addition to the experience of the Commissioners of the States to which reference has been made, we have the experience of our immediate predecessors also. In the Appendix will be found tables showing what is being done in the direction of reducing the cost of transportation by the active forces at work in developing and extending our commerce. The system of railroads in the United States may said to be characteristic of our people and government. The latter is the result of ideal growth, and only a people imbued with a strong sense of individual freedom could have formulated a system so regulated with checks and balances, and maintained it for a century, when the active forces of commercial development were so powerful. As dangers have advanced and threatened, the strong native sense of the people has found a practicable method of averting them. As political necessities have arisen, we have thus far in our career been able to devise a way of settlement for all similar emergencies. So with our railroad system. Half a century has passed

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since Peter Cooper ran his model locomotive out of Baltimore thirteen miles and back in a little more than two hours. Could a panorama of the present railroad system have been spread out before him, it would have bewildered even his practical mind. Yet he has lived to see more than one hundred thousand miles of railroad in his own country, and locomotives running at a speed of more than sixty miles an hour.

While the old channels of commerce have made some progress during this time, as compared with the new, they appear to have remained stationary. This progress has been so rapid under the stimulus which immunity from government interference has given, that some States have taken the alarm and have sought to check, by legislation, the natural forces of industrial and commercial development. In the short space of twenty years this generation has witnessed the disappearance of nature's obstacles in the way of transcontinental travel. The discriminations of nature against the interior of the North American Continent, are practically overcome by the completion of two trancontinental lines of railway, while others are now being constructed.

Invested, as this Board is, with unlimited power over the railroads within the State, what course does wise statesmanship point out for its members to pursue towards this great and growing industry? Ought it inaugurate a policy which, if the lessons of experience of other States are to be relied on, we should have to recede from, or should it adopt the Massachusetts plan of supervision?

The reasons urged by Chambers of Commerce, Boards of Trade, essayists, and reviewers, as well as political parties, will be considered, and our reasons for approval or disapproval fairly and candidly stated. Should our conclusions not be indorsed by the parties most interested in transportation, we hope those who succeed us will be more successful in their study of the economic problems involved in the establishment of an equitable tariff of fares and rates.

JUST AND REASONABLE RATES.

At the outset of this report we announced this common law maxim, and also the "economic axiom" that the price "charged for transportation should bear a reasonable proportion to the value of the service rendered," and the article transported. To this text we still adhere, believing that fair and candid argument will fully sustain our position, and at the same time direct public attention to an economic analysis of the transportation question.

To determine what is a just and reasonable price for a day's labor on a specific kind of work is comparatively an easy matter. This knowledge, however, is obtained through the actual experience of the employer of it. We do not mean to say that a day's labor of every man would be equally valuable, because, in practice, it is found that the labor of some men is two or three times more valuable than the labor of an equal number of other men. Hence, the division of labor in large manufactories. One man is found adapted to a certain kind of work; another to another kind, and so on, until it is found that in the manufacture of a watch, about twenty men are employed in its completion, neither one of whom would be able to make a complete watch. The skill that is required to make a complete watch is divided into twenty parts. The adeptness acquired in working

upon a single part of the machinery, without change, enables the workman to accomplish double the amount of labor of the particular kind that he could were he to work promiscuously upon all of the parts. This economic division of the labor of the twenty workmen enables them to complete forty watches, while an equal number, each making a complete watch, would complete but twenty. This greater achievement is obtained by a judicious classification of the labor required in the manufacture of a pocket timepiece. The question then arises, is the community benefited, when the skill and labor necessary to make a watch is so classified and divided as to produce two? By it the average cost of watches is materially reduced. Apply the same principle to the classification of freight carried by a transportation company. The term "freight" may include a thousand different species of goods, all differing in value. The actual cost of handling and moving a ton of one may not be more than that of moving a ton of another. The value of one may be a thousand times more than that of another.

We will illustrate by taking an article of universal consumption in large quantities and one of general use in small quantities. Wheat and tea will illustrate our point. The average price of wheat at San Francisco is $30 per ton, and the average price paid for marketing in 1881 was $2 30 per ton. The average price of tea will approximate $1,200 per ton. Now why should not the tea be carried just as cheaply as the wheat? The labor of handling and moving is no more, and why should the carrier be permitted to charge more for carrying one than the other? The right to charge in either case is not a "right" obtained by statute, but an inherent right, inseparable from the ownership of private property—neither can a statute take it away. The right, then, to use private property so as to make it most serviceable to the owner will not be questioned, provided it is used in a reasonable way.

But to return to our question. The relative value of these two commodities is as forty to one, and the relative consumption as eighty to one. Applying the economic theory of classification to these articles, and it would lead the manager of a transportation company to establish a rate for each, bearing some proportion to their relative values. There are many producers of wheat at long distances from market. This product cannot bear a high rate of transportation without lessening its production. They are also consumers of tea, sugar, clothing, boots, shoes, and drygoods, and numerous articles of equal or greater value than tea. Now it makes no difference to the consumer whether the charges of the carrier of these various commodities be fifty cents per ton per mile, for five hundred miles, or whether he carries them for three cents. The merchant who sells to the consumer a pound of tea carried five hundred miles at fifty cents per ton per mile would add only ten cents per pound to its cost, while a charge above one cent per ton per mile on the wheat would prevent its production, five hundred miles away, for the general markets. If we extend the comparison to drygoods and clothing, the contrast will be still greater. Twenty-five cents per ton per mile on fine silks from New York to San Francisco will make no difference to the purchaser of a lady's dress than if it was carried for nothing.

Now suppose an inflexible rate of five cents per ton per mile were established on all kinds of freight, and enforced, the effect would be either to stop the production for the general markets of lumber, wood,

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coal, grain, and produce of many kinds, which under the present system are now marketed with profit to both the producer and the consumer, or materially increase their cost to the consumer. Were this Board to establish this rate under the authority conferred by the organic law, such "rates must be deemed conclusively just and reasonable," and from a determination of controversies arising under the rates we might establish, there is no appeal to the Courts of the State. The effect on many struggling industries would be disastrous in the extreme. Under the present tariffs of the Central Pacific, and roads operated by it, the average rate for all freight moved is about 2.116 cents per ton per mile. This is, however, distributed by classification, so as to place the charges for transportation where "they can be best borne." While we might find some articles improperly classified, we have found the general classification adopted by this company judicious and quite satisfactory. Under it the traffic which is charged above the average, enables the producer of the cheap and bulky commodities to market them profitably, and he does not feel the additional charge on the expensive commodities which he consumes in small quantities. A judicious classification *ad valorem* or approximating to this system, we believe to be more in the interest of the people than a single uniform classification. The ablest political economists of the United States hold, that in adjusting our revenue tariff laws, that the *ad valorem* theory is the only correct one, because it distributes the burden of taxation upon those who are best able to bear it. A specific charge on a pound of woolen cloth imported into this country is uniformly fifty cents, and an *ad valorem* charge of thirty-five per cent. Under this specific tariff the yard of English pilot, worth thirty-three cents at home, is enhanced by nearly two hundred per cent in our market, and is virtually excluded. The cost to the consumer of similar goods of our own manufacture is increased in the same ratio. The same tariff is applied to superfine broadcloth, which the wealthy alone use, and it is only increased in price one fourth the ratio of what the pilot is. An *ad valorem* tariff is pronounced by the ablest publicists the true system for obtaining revenue for the support of the Government and affording incidental protection to our domestic industries. A discriminating railroad freight tariff is analogous to a discriminating government revenue tariff. The ultimate object of each is revenue, at the same time so adjusted as to incidentally encourage the development of domestic industries. An inflexible freight tariff would tend to suppress, rather than encourage, the production of cheap commodities, which are of universal consumption. We quote from the report of the Commissioner of Transportation on this subject, as follows:

FREIGHT CHARGES.

If it were practicable to ascertain the cost to the railroad company of transporting any particular lot of freight, the question of regulating charges for transportation would be much simplified, for it would only remain to be determined whether a uniform profit should be allowed on the carriage of all goods, or one that should vary in accordance with classification. But it is not possible to ascertain the actual cost of movement in advance of the close of the season. So large a proportion of the cost of managing and operating a railroad consists of fixed expenses, which are, necessarily, the same in amount without reference to the volume of business transacted, that the actual additional cost of transportation of any particular lot of freight over that of running the train without it is scarcely appreciable; it amounts to little more than that of handling the goods. The "cost of transportation" in this sense cannot be made the basis, nor the profit on it the measure of a proper charge for carriage, because each parcel of freight should also bear its due proportion of the necessary general expenses of the road. This it is impossible to ascertain without considering the whole volume of business—a thing liable to continual fluctuation, and impossible to be known in advance. "Cost of transportation," therefore, in the sense above indicated, simply fixes the point below which railroad companies cannot transport without actual loss. It regulates only the minimum of charge.

INFLEXIBLE RATES.

Hitherto inflexible rates, in those States which have adopted them, have proved detrimental both to the producer and carrier. The cost of transportation must be met by a charge for the service rendered. The cost of this service depends upon the volume of business and the character and cost of construction, and maintenance of the road over which the traffic is transported. No correct calculation as to such cost can be made by a legislative body or any other inexperienced persons.

Even with experienced agencies contingencies arise which set inflexible rules at defiance. What would be a just and reasonable rate, with a given amount of business, would be an unjust and unreasonable rate, with two or three times the same amount of business.

The modifications in the rates made by transportation companies grow out of their experience, which invariably shows that a large volume of business at reasonable rates proves much more remunerative than a small volume at high rates. The profits of the former are limited only by reaching the maximum of production; while the profits of the latter are reduced by the limitation of production to its minimum.

The question of a reduced maxima of fares and rateshas been discussed at various times by the Board. We have requested the managers to give reasons why the maximum rate charged should not be reduced. In these discussions the managers have usually participated, and have given the Board facts and figures, which, upon a thorough investigation by ourselves as to the effect of low maxima have determined us to move with the utmost caution. While there have been but few requests, even, for a modification of the rates, there has been no request on our part for specific reductions for the promotion of any particular industry that has not met with a favorable response. The desire on the part of the companies to meet all the wants of the shippers and producers, has rather kept in advance than in the rear of our demands. The proposition for reducing the maxima has not been adopted for many reasons which follow.

Lowering the maximum rate on freight necessitates an increased minimum rate to realize an equal amount of revenue. Without reducing the maximum, we find that, since 1872, an average reduction of passenger rates as follows: 1872, the average rate for all was 3.83 per mile; 1873, 3.65; 1874, 3.52; 1875, 3.27; 1876, 3.24; 1877, 3.02; 1878, 2.95; 1879, 2.72; 1880, 2.67; 1881, about 2.67.

It will be seen by the tables in the Appendix that there has been a gradual reduction of both fares and rates during the period covered by those tables. As traffic has increased, a gradual scaling downward in charges has followed. Whether the inspiring motive be an enlightened self-interest or other cause, the fact remains, and the people reap the benefit.

HIGH MINIMUM.

The object of a high maximum is, that there may be a correspondingly low minimum, and as these extremes approach each other, the just equilibrium which high cost and low cost goods bear to each other is destroyed. Because the average charge on all freight carried is only a little above two cents per ton per mile, it does not follow that the mean between fifteen, the maximum, and say three, the minimum, or nine, would be a reasonable rate. It would be extor-

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tionate on many articles of traffic, and would not pay cost of handling and movement of others; hence, a high maximum implies the lowest minimum on cheap traffic. In most countries there is no maximum at all, and notably so in most of the States east of the mountains.

This system of adjustment enables the roads east of Chicago to move grain at half a cent per ton per mile in certain emergencies to the seaboard.

THE JUDICIAL CHARACTER OF REASONABLE RATES.

Are the fares and rates just and reasonable in this State? A reasonable rate is right. An unjust rate is wrong. How shall the question be determined? Mr. J. M. Mason, in the North American Review, says: "* * * Whether a charge is reasonable is emphatically a judicial question." This we indorse fully, but dissent from what follows: "But as it is competent for the Legislature to furnish the Courts rules of evidence, statutes prescribing the maximum charges for common carriers are regarded simply as a legislative declaration of the amount to be considered reasonable * * *." Let us apply this principle. The maximum rate on freight is fifteen cents per ton per mile. A carload of wheat is shipped from Redding to San Francisco, via Benicia; distance, 260 miles. The law assumes this to be a reasonable rate, and if Mr. Mason's theory be correct, the charge for ten tons of wheat would be $390 or $39 per ton. The wheat is worth $32 per ton, or $320, leaving a deficit against the shipper of $70. Would any Court worthy the name hold that, because of the rule of evidence prescribed by the Legislature, the rate was just and reasonable? This may be good in law, but it is bad in morals. When a Legislature prescribes a rule of evidence in derogation of private or public rights, it is the duty of the Courts to set it aside. Justice Waite, in the celebrated Granger Cases, says: "In countries where the common law prevails, it has been customary from time immemorial for the Legislature to declare what shall be a reasonable compensation under such circumstances; *or, perhaps more properly speaking, to fix a maximum beyond which any charge made would be unreasonable.*" [The italics are ours.]

Now, the second clause of the above paragraph materially modifies the first; the implication being that, in order for a common carrier to have sufficient flexibility in establishing his rates, a maximum sufficiently high to be no restraint at all should be made. But the vital question to be determined is, whether the Legislature can perpetrate an injustice to either shipper or carrier, by prescribing a rule of evidence which will prevent a wrong from being redressed in the Courts of justice.

We think the Supreme Court of Illinois, in the case of the Chicago and Alton Railroad Company vs. The People ex rel. Gustavus Koener et al., Commissioners, has laid down a rule of action which might with profit be emulated by other judicial bodies. This decision established a rule of action for a legislative body, when either passion or prejudice had attained supremacy therein, and we insert an extract bearing upon the subject under consideration, although the question before the Court was "a legislative Act" prohibiting "unjust discrimination."

The Court says:

This provision, expressly directing the Legislature to pass laws to prevent unjust discrimination, is a recognition of the palpable fact that there may be discriminations which are not unjust, and, by implication, it restrains the power of the Legislature to a prohibition of those which are unjust. That was undoubtedly the object of the Legislature in passing the existing law. This is clearly shown by its title. But the Act itself goes further. It forbids any discrimination whatever, under any circumstances, and whether just or unjust, in the charges for transporting the same classes of freight over equal distances, even though moving in opposite directions, and does not permit the companies to show that the discrimination is not unjust. The mere proof of the discrimination makes out a case against the railway companies, which they are not allowed to meet with evidence showing the reason or propriety of the discrimination, and then, upon this sort of ex parte trial, imposes, as a penalty for the offense, a forfeiture of the franchise, which would often be equivalent to a fine of millions of dollars. The object of the law is commendable, but such a proceeding, to be followed by such a penalty for the first offense, cannot be sustained. It could only have been authorized through the inadvertence of the Legislature.

The law as it now stands, makes an offense out of an act which might be shown not to be an offense, but an exercise of a wise discretion, really beneficial to the people of the State, and while debarring the companies from all right of explanation, confiscates their franchises upon the first conviction. The Legislature cannot raise conclusive presumption of guilt against a natural person from an act that may be innocent in itself, taking from him the privilege of showing the actual innocence or propriety of the act, and confiscating his property as a penalty for the supposed offense. Those provisions of our Constitution which forbid the deprivation of life, liberty, or property, except by due process of law, and which guarantee "the right of trial by jury," as heretofore enjoyed, and the right in all criminal prosecutions to appear and defend in person and by counsel, would all be violated by such a law. Those provisions, it is true, are designed to apply to natural persons, but artificial persons must be permitted to invoke the spirit of justice which prompted them, so far as may be necessary to protect their property and franchises against the operation of a law that substantially condemns without a trial. That the naked fact that a railway company charges a larger sum for transporting freight of the same class over a given distance than it is charging for the same distance over another part of its road, or in the opposite direction, is not, of itself, conclusive evidence of an unjust discrimination, will be manifest on a moment's consideration. Take, for instance, the road of the appellant, with one terminus at Chicago and the other at East St. Louis. At one season of the year more freights are moving from Chicago towards East St. Louis than in the opposite direction. The consequence, of course, is that the supply of empty cars at the latter point will be in excess of the demand. There is a water route between these points which also touches several intermediate stations upon the road. Now, unless the railroad company is permitted, under such circumstances, to induce shipments over its line by lowering its freights, it is evident that a portion of its cars will return empty. This would, of course, necessitate a higher charge for freight moving towards St. Louis than it would be necessary to impose if return freights could be secured by lowering the rates on the return trip. To forbid the company to lower the rates of return freight would thus benefit no one, and would work an injury both to the company and to the people along the line. At other seasons of the year the larger amount of freights is moving in the opposite direction, and then the operation must be reversed.

We give this illustration for the purpose of showing that a difference of price for the same distance of transportation is not necessarily an unjust discrimination, and that any law must be fatally defective which infers guilt, as a conclusive presumption, from the mere fact of difference of rates, without permitting the companies to show why the different rates were adopted.

We think the principle enunciated in the above named case is more in harmony with our system of government than that of the Supreme Court of the United States in the Granger Cases. In the former case the Court set aside a statute which made an offense out of an act which might be shown not to be an offense, "but the exercise of a wise discretion really beneficial to the people of the State," while the latter holds that there is no power in the Court to right a legislative wrong.

Invested as this Board is, with judicial, as well as legislative powers, it would be derelict to its duty to the producers as well as the carriers, did it not exercise a discriminating judgment in the determination of all questions as to the reasonableness of the rates to be established. Besides, an enlightened sense of justice demands that we shall do right.

PUBLIC HIGHWAYS.

In many of the public discussions and published reviews on the railroads, their functions and duties, the term "public highways" is

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applied to them; this application has led to much confusion. If the functions of a railroad are understood, it matters little what it is called. Its functions are not those of a public highway in the sense it was formerly used, and never can be, for that term meant a road which all had the right to travel on at their own pleasure in their own vehicles. A railroad is not a highway of this sort. If by the term it is intended to imply that a "public use" attaches to it, we accept the definition. We are particular to have it thus defined, in order that we may exercise the powers conferred upon this Board to the extent of the admitted "public use," whenever the public good may require. We hold that the property of a railroad company of every species is private. Each stockholder's interest is his private property. While the State has a right to insist upon equal and like treatment, under similar circumstances, for all who are similarly situated, we are not prepared to admit the "public use" to the extent of impairing the value of private property of citizens who have invested it in a business which is with the people.

A common carrier by railroad is proprietor of the roadway and all the rolling stock and equipment necessary to its successful operation. The rates are not only for the transportation services as rendered by common carriers over public roads and waters, but also for the use of the roadway, its maintenance, and for the risk assumed in its construction. These latter are the principal factors which distinguish carriers by rail and carriers by water. We will not assume that a railroad built and owned by private citizens bears the same relation to the public as a public waterway or highway. While we claim that there is a public use in the railroad owned by private parties, the public use extends no farther than the right of each person and his property to be transported on payment of a reasonable sum as compensation.

The carrier, in the one case, has no right to charge for the use of the "road" and "waterway" because they belong to the public. In the other he has, because it is a part of his own property. Because the organic law "declares railroads and other transportation companies common carriers," and established a commission clothed with powers far-reaching, we do not proceed upon the hypothesis that the State owns the roads, and may do with them whatever the excitements engendered by a political campaign may dictate. Our chief object should be to harmonize the relations of "production and transportation," and to impress this economic fact upon the minds of the representatives of each, viz.: that "the development and necessities of trade in practice always have nullified, and inevitably must nullify the special Acts, no matter how carefully and skillfully they may be prepared." It took conservative old England forty years to learn this important fact, but having learned it, Parliament has at last settled down upon the basis that the interference in the details of working the traffic of her railroad companies is mischievous, and works more injury to the public than non-interference. Although this fact has been demonstrated repeatedly in the United States, yet it remains in party politics in this State.

Each party bids against the other in the amount it will save the people by reductions in the income of the transportation companies. A few merchants join this or that party that will promise the lowest special rates, regardless of the influence that such attacks on capital may engender among those who regard the rights of property but

lightly. All this is political immorality, and the intelligent leaders of each of the parties ought to be above it. If these attacks on capital go on a few years more may we not ask this question, at this time: Will the political ethics that would deprive capital invested in railroads of its income hesitate to take the principal also, and if successful in this case, will it hesitate at confiscation of capital invested in other channels? We desire to extend the analysis of the "public use" of private property to commercial transactions other than those of transportation. All business is more or less with the public.

There is a greater public use in the articles "bread and meat" than in transportation. The one is necessary to existence, the other makes existence much more desirable. The business of A. T. Stewart was with the greatest number of people he could control. His transactions yearly were as great in the aggregate as those of the New York Central Railroad Company. He made contracts with manufacturers, both in this country and in Europe; he made special prices to cash customers and gilt-edged patrons; he established branch houses as feeders for his New York house, and in all these immense transactions, each of which was an individual transaction, and millions of people were remotely dependent upon his regularity in serving them; yet the idea of public supervision of his business was never dreamed of even remotely. The Granger decision says: When private property becomes of public interest the public has a right to control it. It says, by implication, also, that the extent of this "public use" is a legislative and not a judicial question. That the Court has no power to redress a legislative wrong. However much against public policy the Acts may be, redress must be sought at the polls and not in the Courts. Some recent judicial decisions have a decided leaning in another direction, notwithstanding the former opinion.

We are of opinion that there is a well defined line where "public use" ceases, and "private right" commences, which has been definitely marked by the Supreme Court of Illinois, already referred to.

There are no investments of capital in any industry, that are not of interest to the general public, no matter whether it be in reclaiming the desert lands of the Counties of Kern and Lassen; the swamp lands of the Sacramento and San Joaquin Rivers; or the iron foundries and mills of San Francisco. All these investments are of the greatest interest to the people at large. Will you admit, however, that the public has an interest superior to your own, except for taxable purposes? The same code of morals that would deprive the capital invested in transportation property of its legitimate earnings, will apply to the latter with equal force.

DISCRIMINATION.

Why should this term applied to transportation be considered less complimentary than when applied to any other branch of business, or to a person? It is certainly complimentary to be considered of a discriminating mind. It is not complimentary to be unable to distinguish between different things. There is no trade or occupation that could prosper without the exercise of a judicious discrimination. Nature has discriminated largely in the creation, and man, the higher type of created beings, has not succeeded in all the ages past in overcoming them entirely. But the organic law of this State declares

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that there shall be "no discrimination by transportation companies in their charges between places or persons." This declaration would seem to be a "declaration of independence" of differences founded on natural conditions.

Were this Board to attempt the enforcement literally of this portion of the organic law, it would, first of all, be necessary to divest itself of that power of discrimination which our respective constituencies believed we possessed, when they elected us to the important positions of Railroad Commissioners. The judicial character with which the organic law has invested our office, has enabled us to exercise a judicious distinction, however, between "just and unjust" discriminations. Discrimination, by itself, should excite no fear. It is only when it is preceded by the word "unjust," that it should attract public notice. Injustice alone should merit a penalty.

We will now attempt to illustrate what, to us, appears to be "just and unjust" discrimination. The organic law, as it now stands, without the exercise of the discretionary power which the judicial character of our office clothes us, would require the fixing of a penalty for an act which might be shown to be no offense at all. All places do not enjoy the same natural advantages, neither can their disadvantages be entirely overcome by the arts of man. The earth was not made a level plain; had it been, it would probably have been enshrouded in water, and its inhabitants been of a different character than they are. But in all the history of creation we find judicious discriminations on every side, material, physical, mental, and moral. Of the material and physical discriminations, while we have not the power to overcome them, we will endeavor to explain why it is that the ingenuity of man has not yet been able to do so, and, also, why it would not be either expedient or desirable.

The Cities of New York and San Francisco are situated opposite each other, facing the two great natural highways of the world's commerce. Formerly the commerce between these cities was by the way of Cape Horn, about 18,000 miles, or by the Isthmus of Panama, about 16,000 miles. For many years these two routes furnished the only means of communication, and they were invaluable and served us well. They are invaluable still, and will continue to be through all time. But the active developing forces of commerce demanded a quicker communication between the East and the West, and the demand was responded to by the completion of the first transcontinental railway. Those living along its route against whom nature had discriminated most largely, rejoiced that so much of nature's discriminations had been overcome. The "prairie schooner" and the mule team gave place to the locomotive and "palace car." The feed stations of the wayside disappeared and thriving prosperous towns took their places. Mines were developed; desert lands were converted into productive farms, and civilized society became firmly established where a few years ago there was naught but waste places. Now, what has this to do with discrimination? We answer, very much. We are told that the Central and Union Pacific Railroad Companies discriminate against all these places that have been redeemed by the labor of the hardy settlers of these thriving towns along their line.

We admit that discrimination, so called, does prevail all along the line from the Missouri River to San Francisco. These discriminations, however, are not arbitrary unless made by these companies,

but are the result of natural conditions, over which they have no control.

San Francisco and New York are so situated to the markets of the world, that they obtain all the benefits desirable therefrom. At each of these places, the competition afforded by the two oceans, places them in position to establish the rates on all the through traffic between them by railroad. Their natural position guarantees this. As we recede from either, towards the center of the continent, the competitive forces at these points gradually recede also, until the central point is reached. From thence, in either direction, the competitive forces begin to be felt, until its full power is reached at either terminus.

No regulation of whatever nature can overcome these differences until railroads can transport persons and property as cheaply as vessels on navigable water can perform the same service. But we are asked, "Why are railroads allowed to discriminate against Reno, Salt Lake, and other intermediate points, by charging the shippers at these points more than they charge the shippers at San Francisco, when the distance is much greater to the latter point? Or, to be more specific, why is the rate from New York to Reno four dollars and fifty cents per hundred pounds, while it is only two dollars and fifty cents to San Francisco, three hundred miles further." We answer that the railroad company does not make the rate to San Francisco. It simply takes what the merchants will pay. The ocean establishes the railroad rates to San Francisco, and they must take that or not get the traffic. In other words, if the railroad company could establish the rate to San Francisco as well as to Reno, and made the difference of two dollars per hundred pounds, we should think its managers did not understand their business. But if the rate from New York to Reno by itself is reasonable, and the rate by water route to San Francisco was less than the rail route to Reno, there can be no injustice done to the latter by allowing the railroad to compete for the San Francisco business. By leaving the railroad free to do this, it will increase its through business; and whatever of profit there is made on the latter will to that extent enable the company to reduce the rates at all intermediate points. Reno, Wadsworth, Humboldt, and Salt Lake, being situated between two chains of mountains, are among the places which nature has discriminated against most heavily on the overland route. To reach either of them all freight and passengers have to be elevated to an altitude of eight thousand feet, and lowered again.

Before the completion of the Central Pacific and Union Pacific roads, the rates from New York to San Francisco were as high on nearly all, and on many classes of goods higher than now, while the rate to either of the places named was from twenty-five to fifty dollars per hundred pounds. In dollars and cents the natural discrimination was from forty-five down to twenty dollars per hundred pounds against these places. To the extent of the difference between the present rates and those prevailing before the construction of the railroads, all these places have been benefited. As commerce expands in the directions of Japan, China, Australia, the Pacific Islands, and Western Mexico, thus securing an increase of traffic between San Francisco and New York, the rates to these intermediate points can be reduced still further and the discriminations lessened. We state it as an axiom, that any competitive traffic which

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pays any profit either directly or indirectly, is beneficial to the local shipper to that extent. Yet it involves the charging in some cases more for a shorter than for a longer distance.

Actual illustrations are sometimes more convincing than argument, and to sustain the position taken as to discrimination we will cite an actual case, illustrating the economic principles involved in the development of commerce. Newhall, on the Southern Pacific Railroad, is situated about 450 miles from San Francisco. Near this station are located the San Fernando oil wells. It is a well-known fact that cheap transportation is an essential element in the development of an industry of this character. It is about forty miles from the port of Wilmington, on the Pacific Ocean. The ocean rate from Wilmington to San Francisco is much below the average cost of railroad transportation between Newhall and San Francisco. If no discrimination is made the rail rate per mile from Newhall to Wilmington will be the average rail rate per mile from Newhall to San Francisco. To illustrate, call it three cents per ton per mile. This would be equivalent to one dollar and twenty cents per ton to Wilmington. Allowing the ocean rate to be five dollars per ton will equal six dollars and twenty cents per ton from Newhall to San Francisco via Wilmington. The rail rate from Newhall being the same, three cents per ton per mile, and 450 miles would make the cost of carrying by the railroad, thirteen dollars and fifty cents per ton or seven dollars and thirty cents more than via Wilmington. Now, we ask, who would be hurt if the railroad should be allowed to compete for this traffic? Who would be hurt if the railroad should offer rates as to induce the opening up of this industry? This is just what has been done, and an industry has been developed which promises good results. While the rates may be below the rates on some other commodities, and may be carried a longer distance for less money, it aids in lowering the average cost of all traffic, and benefits the local shippers to the extent of the receipts from it above the actual cost of moving. Any inflexible regulation of this Board which would tend indirectly even to prevent the railroad from securing this traffic would virtually prohibit competition and paralyze many industries now being developed. In competing for this traffic the railroad has to discriminate, but this works no injustice to any interest. The apparent inequality is in effect an indirect aid towards equalizing the charges on all traffic.

In establishing rates, each locality is considered by itself, as to competition and its relation to the general markets, and as to the amount of traffic it can supply the carrier. If the resources of Truckee are greater than those of Carlin, Truckee should not be deprived of its advantages to benefit Carlin, whose ability to furnish traffic is less than that of Truckee. Wherever there is a large and regular supply of business, it can be done at lower rates than at points where the business is less; hence the absolute necessity of discriminating rates. Without recognizing this principle, the most unjust discriminations would be made against the points possessing the greatest natural advantages. Los Angeles is a notable case in point. She is located near the ocean, and the rates to that point are established mostly by the cheapest of all transportation, viz., water. It is also a large distributing point for Southern California and Arizona. To forbid differential rates by the Central and Southern Pacific Railroads would be equivalent to prohibiting competition between the

ocean route and the railroad, and depriving Los Angeles of the advantage of regular and rapid transit of goods, which the railroad affords. In other words, it is discriminating against what naturally, and of right, belongs to Los Angeles, and would benefit no one. The same comparison applies with greater force to San Francisco in regard to the overland traffic.

The natural position of San Francisco compels rates overland to be made as low, all things considered, as by the water route. The railroad must meet these rates, or abandon the San Francisco business. The latter alternate would involve an increase of local rates the whole length of the roads to recoup what would be lost by abandoning the through traffic. This would arrest the natural development set in motion by commercial necessities, restore the natural discriminations which had been partially overcome, and entail hardships upon all. Had this Board the power outside the State to enforce such a rule, we should deem it unjust and unreasonable, and against the best interests of the community, to exercise it. San Francisco can afford to profit by and enjoy her natural advantages. Commercial restrictions may annoy, but cannot permanently injure her. The apparent discriminations in her favor are not the voluntary concessions of the railroad companies, but the logical sequence of her natural position.

Sitting at the Golden Gate, and holding the keys in her hands to the commerce of the Orient, she is in a position of dictation rather than submission. The Pacific Ocean cannot be abolished, nor its use curtailed. In the last ten years the commerce of this port has largely increased; city improvements have kept pace with the increase of population, and evidences of general prosperity are seen on every hand, and we cannot say that San Francisco has not followed the law of growth of other American cities. The decline in American shipping has transferred our foreign carriage to foreign ships. While we regret the disappearance of American clippers that formerly came in at the Golden Gate, and the consequent transfer of our wheat freight to foreign ships, we can take some credit for the internal commercial facilities, which more than equal the loss of our clipper fleet. The opening of another transcontinental railway, with its proposed facilities for the transportation of the surplus wheat crop, via New Orleans to Europe, will have the effect of reducing rates by sea. This difference will be retained at home, and will inure to the benefit of the producer. As we have before stated, some local and individual hardships have been incurred by the change in the channels of commerce, yet there are corresponding benefits more than equaling them all. Under the old regime it frequently occurred that a few merchants obtained control of all the articles of merchandise of general consumption, both in port and to arrive, for a long time ahead, and the result generally was that for six months or more, prices for all such commodities as were in the pool trebled, while those who were parties to the combination usually retired with fortunes at the end of that time. With our present facilities for rapid transit of goods, and the use of the telegraph, it is impossible to corner any article for more than fifteen days. The change wrought in that direction is certainly most salutary. Legitimate trade rests upon a firmer basis, fluctuations in prices are less violent, and commercial prosperity is more general than under the old order

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of things. If accidental fortunes are less frequent, legitimate mercantile independence is more general.

To prove the statement that the commerce of San Francisco has not declined nor likely to decline, we have copied from the report of the Bureau of Statistics the imports and exports from 1856 to 1881, inclusive. (See Table 4 in the Appendix.)

We might institute comparisons between the railroads west of Missouri River with those east of it, going to show that when all the conditions are considered which must regulate the charges for railroad transportation, that the fares and rates on the western roads are comparatively as reasonable as are those of the eastern roads. The country which is served by the New York Central Railroad system between the City of New York and Buffalo, contains a larger population to the square mile than any other line of railway within the United States. As compared with the same distance served by the Central Pacific system the ratio is as ten to one. The resources of all railroads are only those derivable from public patronage, and this is measured by the activities of commerce. These resources, of course, are affected by the active forces of commercial development, either near or remote. As a ripple upon the ocean vibrates to its utmost limit, so the vibrations of commercial and industrial development, set in motion on the shores of the Pacific, are felt upon the shores of the Black Sea, and within the confines of Asia, at the same time. Every industry that is developed contributes near or remotely to some other industry. These commercial forces have enabled the trunk lines to the Atlantic seaboards to compete in marketing the products of the western States successfully with the lakes and Erie Canal. We have taken for illustration the two extremes of the railway system connecting the Atlantic and Pacific. The rates upon each, as compared with the travel and traffic, are certainly not unfavorable to the Central Pacific system. For comparisons see tables in the Appendix. There will also be found tables comparing the rates of railroads whose resources as to population and commercial development are nearly equal with that of our own. The object of these comparisons is to direct the attention of the people to the investigation of the causes which control in the making of tariffs of fares and rates for inland transportation.

LOCAL RATES—HOW DETERMINED.

The elements entering into the calculation of establishing an equitable local freight tariff, are the distance, amount of traffic, obstacles to be overcome, competition, and the value of the service to be rendered. As to the termini of the road, the rates to all intermediate stations are local. We allude to this subject, because it is so closely related to the question of discrimination. If discrimination is not used in establishing rates at such places, it would seem to be an injustice to all other places.

This principle is in harmony with the theory upon which we started, viz.: that the rates to all points on the line of a railroad must bear a reasonable relation to the value of the service rendered. The service to and from all interior points is more valuable to the shipper than it is to points more favorably situated. The object is, to arrive at reasonable rates as near as possible, upon a system which distributes equitably the charges, by an average upon all the traffic,

ad valorem. The Government charges for its postal service proportionate to the value of the service, and not in proportion to cost. A letter weighing a quarter of an ounce is charged three times as much as a newspaper weighing two ounces, for the same distance. The object of the Government in regulating its postal service is not profit. It makes no investment involving millions of capital in perfecting its system, which must be recouped from the business; but it distributes the expenses equitably upon the whole people. The differential rates charged upon the different classes of mail matter, are based upon the assumption that a letter or newspaper is equally valuable to the receiver, whether carried ten miles or a thousand. If its postal system were regulated on the basis of cost, there would be as many prices for letter-carrying, as there are postoffices in the Union.

Freight transportation, in many instances, is more valuable for a shorter than a longer distance; yet an inflexible rule would prohibit the performance of the more valuable service, on pain of forfeiture of the less valuable, and vice versa.

The fixed expenses of railroads render it necessary that the income for maintenance should be permanent. The local business, therefore, has to be relied on largely for the necessary income to pay for maintenance. The competition traffic will, to the extent of the profit on it, relieve the local rates; and when we use the term "profit," it implies what there is left after paying all the expenses and liabilities incident to it for the year. The rates that would yield a profit one year might, the following year, entail a loss. We will illustrate. The average rates on the Central Pacific system for 1881 are 2.116 per ton per mile. Assume the receipts for freight traffic to be fifteen million dollars. In order to realize the same amount of revenue the following year, the same amount of traffic must be done. The Table No. 4 in the Appendix will show the fluctuations in the commerce of San Francisco, already noted. These fluctuations apply indirectly to the railroads. If traffic falls off, rates must advance or receipts decrease.

We might instance cases where grain has been moved in this State at half a cent per ton per mile for long distances. To carry at that rate would ordinarily entail loss by itself, but the same party may have to ship goods in return that he can afford to pay five cents, and on some, even fifteen cents per ton per mile. To refuse to carry the grain for half a cent because it is less than one fourth the average rate, would injure the producer's industry and the carrier's business in certain other directions, by depriving him of a traffic which would be mutually beneficial.

CLASSIFYING FREIGHT.

A judicious discrimination in classifying freight is a great adjunct in equalizing the discriminations imposed by natural conditions. The more valuable productions originate at points where nature has been more generous in her favors. Centers of trade and population furnish the sparsely settled sections of the country with manufactured articles of commerce on which much labor has been expended, in exchange for large quantities of earth's products, upon which comparatively little labor has been expended. One uniform classification for a ton of wheat, on which five days of unskilled labor has been expended, with a ton of boots, shoes, and clothing, on which a hundred days' skilled labor has been expended, would, to the intelligent

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producers of both, seem to be a long stride backwards in economic science. When it is considered that the shoemaker in Boston can, with a single day's labor, pay the freight charges for one thousand miles on flour enough for himself and wife for a year, will either he, or the farmer who produces it, object to a judicious classification of their respective products for transportation, on a basis proportionate to the value of each?

Judicious classification of freightable commodities is one of the great aids to the development and expansion of the productive industries, which finds its authority in all commercial codes. Our immediate predecessor says upon the subject, in his report in 1880:

There are discriminations arising from the classification of merchandise, and from competition among dealers in certain kinds of merchandise in different localities, such as coal, lumber, and other cheap commodities, which will not bear a high rate of transportation. For example, lumber is sent from the mills at Truckee, eastward to the vicinity of Salt Lake, just as cheaply as to points one hundred miles nearer Truckee. This of itself constitutes discrimination against the nearer point, but if the lumberman gets a small profit at the farther point, and the carrier the cost of transportation or a little more, it makes the income of each average better, and creates a market which could not be had if the same proportionate rate were charged as is charged to the nearer points.

The same rule will apply in relation to coal brought from the mines of Wyoming. Unloaded cars weigh, on an average, a little more than half as much as loaded cars. At what rate can they be moved so as not to cause loss to the carrier? Whatever is gained in that way, although the rate to points westward is proportionately less than to Salt Lake, is so much made, yet in the latter case Salt Lake is discriminated against locally, but the amount earned in transporting the coal and lumber the longer distances, enables the carrier to transport the return freight at correspondingly lower rates.

Merchants and manufacturers make discriminations in their trade founded upon the same natural differences and distinctions that affect transportation charges. Competition in trade and commerce results in discrimination between persons doing business in different localities. The merchant at Salt Lake can obtain goods at San Francisco at better rates than the merchant at Virginia City. The former has the option of the eastern and western markets, with equal facilities for reaching them; the latter is almost necessarily confined to the western market. Their geographical positions, relatively to transportation facilities, give the Salt Lake merchant this advantage; and when he appears in the San Francisco market our merchants know that they have to compete with St. Louis and Chicago for the customer. They will accept a profit that would not tempt them from the Virginia trader. Legislative enactments cannot affect the relations of the two localities named to the markets of the world. Commercial law is flexible, and adapts itself to those differences founded on natural conditions, and it is the same principle that underlies the adjustment of tariffs by transportation companies.

As bearing upon this subject, it is difficult to ignore the fact that almost every railroad company, both in this country and in England, was chartered with specified maximum rates, up to which there existed the legal right to arrange transportation charges; and yet not one single company in either country can be found whose average charges are equal to the legal maximum. The principal roads in this State do not average above three cents per ton per mile for freight, and three and one half cents per mile for passengers. The statute existing at the time of their incorporation allowed them to charge fifteen cents per ton per mile for freight and ten cents per mile for passengers.

The modifications in the rates made by transportation companies grow out of their experience, which invariably shows that a large volume of business at reasonable rates proves much more remunerative than a small volume at high rates. The profits of the former are limited only by reaching the maximum of production; while the profits of the latter are reduced by the limitation of production to its minimum.

We may add that classification of freight so as to distribute the charges for transportation equitably over the whole volume of traffic, is but a judicious distinction based upon the economic law of values. * * * 7, p. 93 to 98.

INTER-STATE COMMERCE.

"Congress shall have power to regulate commerce between the States, and with foreign nations." At the time of the adoption of the United States Constitution, the transportation service, or carrying trade, was performed either by vessels on the water, or by team and

wagon on the land. The debates in the Convention are a guide at this time as to what was intended by the various provisions of that instrument. While this Commission has no power over transportation outside the State line, yet the regulation of the rates on inter-State commerce by Congress will have such an influence upon rates established by a State, that we consider it of sufficient importance to notice it in this report.

We have been unable to find sufficient data upon which to base an argument in favor of the power or the right of Congress to establish the commercial relations of citizens residing in different States. The power, if it exists at all, rests in the clause at the head of this article.

It may be necessary to ascertain what the commercial relations between the States were, or might become, if a clause of similar import was not inserted in the Federal compact. At that time each of the thirteen States was as free and independent as are England and France. Each one of them was acknowledged to be a free and independent State, by the great powers of the earth, by solemn treaty stipulation, and was free to contract alliances, conclude treaties, and to do all those things which, of right, a free and independent State might do. Such being their status, they, in order to form a more perfect union than the old confederation guaranteed, and to provide for the general welfare, and defense from within and without, and did ordain and establish the Constitution containing the above clause. From the debates we have been unable to learn that this clause means, or was intended to mean, more than this. It is well known that each one of the States was jealous of its own territory and territorial rights. Had each State been left free to establish the conditions upon which the commerce of one State should cross the line of another State, the large and more powerful States might have established toll-gates at every highway where it entered the territory of another State, and levy toll upon the commerce of its neighbor at its own discretion, and thus cripple the less powerful States. The framers of the compact foresaw what might occur, and to guard against inter-State conflict, they provided a safeguard in the delegation of the power to Congress. The debates do not convey to us any meaning that can reasonably be construed into conferring upon Congress the power to establish the rates a carrier might charge for carrying a wagon or boat load of produce from one State across the border of another. The more reasonable theory would appear to be the prevention of the States from doing it, because commercial industry recognizes no State lines. The idea of conferring the power upon Congress to establish fares and rates was not thought of at that time.

Now, does the power to "regulate commerce between the States" authorize Congress to fix the carrier's charges between the States? From the fact that no such power was exercised, or even discussed, for a century, it may be a fair deduction that no such power was ever intended. Fairly construed, it would seem to operate as a prohibition upon a State to impose restrictions upon the commerce of another State, and vice versa. It established free trade between the States, and through it each State surrendered its right to restrict commerce between the States. For example, the Mississippi River and its tributaries passes through or borders nearly one half the States of the Union. No one of these States has the right, at the State line, to levy tolls upon the commerce of another State, unless Congress, under its delegated power, should consent, and then only

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for some specific improvement to facilitate such commerce. And even this power has virtually been superseded, by Congress making all such improvements to facilitate commerce on our great natural waterways, and paying for them out of the Federal treasury. In this connection, another reason which actuated the States in restricting themselves as to this power, was that no passport system, similar to that prevailing in the German Principalities, should ever be established in this country to harass and annoy travelers at the State lines, and to avert inter-State conflicts of interests they delegated their right to restrict commerce between the States to Congress. The logical implication is, that the right of free and unrestricted trade should not be interfered with, either by the States or by Congress; that if either the States or Congress should attempt any such restriction, the right should be challenged. The right to the free use of all the public waterways and highways was thus secured to the citizens of the several States. But it may be answered, "the right of Congress, although it may not have been exercised, still exists, and is held in reserve to be used when necessary." The right of Congress to regulate the carriers' charges, if it exists at all, is derived from the clause: "Congress shall have power to regulate commerce between the States *and with foreign nations.*" If the clause "and with foreign nations" confers upon Congress the power to establish the rates a common carrier may charge for passengers and freight between New York and Liverpool, or between New York and Montreal, we will yield the point without further discussion. Under the power to regulate commerce between the States and with foreign nations, Congress may very properly exercise the right in establishing the conditions upon which foreign vessels may trade with this nation, and pass the necessary laws for the execution of treaty stipulations which may be made by the treaty making power, but neither can exercise any control over the rates for passengers and freight such vessels may charge. Neither can Congress establish the rates our own vessels may charge when trading with foreign nations. When three miles at sea the ships of all nations are on perfect equality. If the power claimed exists within the three mile limit it ceases on passing it. But we will endeavor to prove that the power over inter-State commerce and international commerce rests upon precisely the same basis, and if it exists in the one case it would seem to exist in the other.

No one has yet claimed that the right to regulate "commerce with foreign nations" gave Congress the power to establish rates for foreign vessels trading with us; how then can the position be maintained that, deriving its power from the same clause of the Constitution, Congress can establish rates for our own vessels trading between the States?

A vessel sails from New York to New Orleans, this is inter-State commerce. Another sails for San Francisco; this is also inter-State commerce, although 18,000 miles of the highway of nations is traversed in the voyage. Another leaves for Calcutta or Australia, under similar conditions. The latter is international commerce, and yet the regulating power in both instances is derived from the same clause, and is based upon the same authority. A train of freight cars leaves New York for Chicago. Another leaves Montreal for the same destination. If Congress fixes the rate on the former, under the "power to regulate commerce" between the States, then why cannot it fix the rate for the latter under the "power to regulate commerce"

with foreign nations? If the right to establish rates for inter-State carriers exists at all in Congress, the right to establish rates for international carriers exists also. We may also conclude that the right of Congress over inter-State commerce upon the high seas, is no greater than its right over international commerce upon the high seas.

The traffic between New York, via Cape Horn, and San Francisco, bears the same relation to inter-State commerce as the traffic overland by the present system of railroads. Congress may, under the authority granted, provide in both instances for the transmission in bond of dutiable goods from the Atlantic to the Pacific, and from the Pacific to the Atlantic. This would be a regulation of commerce between the States; but it would not be claimed, we think, that the carriers' charges were to be established by Congress.

Having given sufficient reasons why Congress has not the power under the Constitution to establish charges for carriers whose property is owned and operated within a State, we hope to be able to convince all who will carefully analyze our reasons of the inexpediency of so doing if the power was not wanting. We may have to traverse some of the points already covered in other parts of this report, but some of the reasons will bear repetition. For seven months out of twelve, the finest system of inland navigation the world has ever utilized is free for water carriage from the Mississippi and Missouri Rivers to the Gulf of Mexico, and from Lake Superior to the Atlantic seaboard by river, lake, and canal. During this time these great waterways fix the rates to the seaboard for all land transportation. These rates are much below the average cost of land transportation to the same points, yet they are better than hauling empty cars. An inflexible law of Congress depriving the railroads of meeting the rates these waterways establish, would result in diverting the traffic from the West to the water routes and the Canadian railways to such an extent as to seriously disturb commercial values at all the great terminal points on the seaboard, and would benefit none but our cousin across the border. This combined system of navigation establishes not only the through, but the local rates in a degree, for all the western traffic, and Congress cannot, by all the power delegated to it, control or regulate it. As well attempt to stop the flow of these great waterways to the Atlantic Ocean, as to establish any other rates for railway carriage than these natural agents of commerce shall dictate.

We may here present what appear to be still greater objections to legislative interference with the detailed workings of railway traffic, whether inter-State or State. We have already stated that commercial law recognizes no State lines or natural barriers. It pushes its way into countries of different tongues, habits, and manners. It is so easily mastered by all people who have anything to buy or sell, that it requires no officers of the law to execute its mandates.

Within the last five years we have witnessed its march southward, not even halting at the national boundary of our sister Republic to the south of us. With its advancement, we have witnessed the cessation of political violence, and a vast improvement in the habits and occupation of the people of Northern Mexico. Since the dethronement of Maximilian, under the leadership of Juarez, whose moral support in that memorable contest for national existence was obtained in the United States, the country has made rapid and permanent advancement. Mexico is a country of marvelous resources. For mining and

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agriculture they equal the best of our own Territories. In the northern States of Mexico the people are poor. They had limited means of communication or of transportation.

The impetus given to commerce by the opening of the Southern Pacific Railroad along the thirty-second parallel, induced American capital to take up its line of march into Northern Mexico. Under the liberal inducements offered by the Mexican Government, several lines of railway are building, connecting the Capital with our great trunk lines of railroad along what is known as the table lands. Already one line has reached the Pacific Ocean at Guaymas. Other railroads are projected farther southward, all, however, connecting with the American trunk lines. Millions of dollars of American capital are already invested with encouraging prospects of large returns. Business between the two countries has already felt the vivifying influence of these railroad enterprises, as will be seen by the following statistics of commerce since 1878. Up to that year the largest amount of domestic commerce in one year, was valued at five and a quarter million dollars. In 1880–81 it was valued at more than eight and a quarter millions, increasing over fifty per cent in three years. For the nine months, from July, 1881, to March, 1882, over eleven million dollars worth of goods were exported to Mexico, and we imported more than six million dollars worth. With the extension of the Mexican railroad system our trade will still further increase. To borrow a term, this may be called a new "conquest of Mexico," not by the sword and the consequent devastation of the country, but by the simple yet all powerful forces of commercial development. We have already alluded to the difficulties that would grow out of an attempt on the part of Congress to establish tariffs for the railroads entering British territory to the north of us. The same difficulty must arise with railroads entering Mexican territory to the south of us. The Canadian railroad companies could neutralize any restrictive tariff imposed by Congress upon any railroad crossing the boundary, and the same could be accomplished by the managers of the Mexican companies.

If Congress attempted to establish rates for international traffic it would at once lead to international difficulties, and to establish inflexible rates on inter-State traffic would simply aid the railroad companies of the countries beyond our jurisdiction to the extent it embarrassed our own. When it is considered how easily traffic is diverted from one line to another; how that a difference of one dollar per carload will be the means of diverting the immense grain and other western traffic to the Canadian routes, Congress may well let the proposed bill for regulating the inter-State railroads sleep another four years, and perhaps by that time all will see the uselessness of the measure. We shall not go into the details of particularizing the thousands of reasons, each one of which is cumulative, why it would be injudicious and unwise for Congress to interfere with the commercial forces set in motion by our railroad system. With the experience of State legislation in ten or twelve States to make inflexible laws for regulating a business, the conditions of which were changing from week to week, even within the limits of the State, and the complete failure in every one to accomplish good results, would members of Congress representing such States be justified in supporting an inter-State railway traffic Act? The difficulties of inter-State regulation are at least cumulative in proportion as the

number of States are affected. Congress has fulfilled its functions when it has held the power of preventing the States from imposing restrictions upon inter-State commerce. This is its function, and this alone; under its delegated power over inter-State commerce. When it will be justified in restraining the active forces of commerce, and repressing industrial development, which the proposed legislation will do, better reasons for the action must be given in favor of it than are offered against such action. No person understands all the intricate details of working the traffic of railways, who has not had practical illustrations in connection with it. It is the study of the best minds of the world, and never mastered except in degree. Those persons who have worn their lives away in its practical details, have never passed a week without having to solve some new difficulty for applying new rules for the solution of old ones, made necessary by changing conditions. The struggle for commercial supremacy of trade centers affect transportation rates to and from those points as much as rival lines; and the solution of questions of this character commands the best thought the country affords in managing the transportation interests, and the man who thinks he understands it without years of experience and study as well, has not yet learned its alpbahet.

It is the man whose experience and study of causes and their effects, that is able to solve the transportation problems as they arise, which is only another name for the living trade problems of the day. Exceptional legislation, establishing prices for transportation, is dealing in values as much as would be establishing prices for the articles transported. Congress would not think that regulating commerce between the States would authorize it to fix the price of wool, wheat, or produce; yet the fixing the carriers' charges on these articles is as objectionable as would be the fixing the price of the articles themselves.

We have briefly adverted to some of the inevitable effects of the proposed inter-State traffic Act. To us it would seem to be an effort to repress the active commercial forces which the completion of the overland railways have put in motion.

TERMINAL FACILITIES.

Not possessing the power to prescribe what the terminal facilities of railroads terminating at San Francisco shall be, we deem it of sufficient importance to call the attention of your Excellency to the matter. The Legislature alone having the power to provide for their improvement, we will direct your attention to them for such recommendations as to you may seem appropriate.

We, therefore, would suggest that the State provide for an improvement to the shipping facilities, by constructing a double track railway upon the entire water front, for an interchange of traffic from car to ship and from ship to car. The want of such facilities has been the means of diverting a very large amount of the grain shipments to other points. A railroad of this kind owned and kept in repair by the State, would tend to lessen the charges at the port of San Francisco, which have been, and are still, a detriment to our shipping interest. The facilities for transferring loaded cars across the bay are of such a character that their transfer involves but little more expense than switching to a side track. Besides, our deep water fleet discharges its cargoes alongside our wharves. Were there such a road, with switches, for cars to run out upon the wharves, it would

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save many thousands of dollars annually to the shipping and mercantile interests. We will mention a single instance which has come under our observation.

Three carloads of machinery were consigned to parties in San Francisco via the South Pacific Coast Railroad from Santa Cruz, distance eighty-five miles to the foot of Market Street. The freight charges were $55 50. The cost of transferring it to the North Pacific Coast Railroad, only one block away, was $55 50 also. The same cost for *seven hundred feet* in San Francisco as for eighty-five miles by railroad. This case is not the only one where the transfer across the city and from wharf to wharf has cost as much as the movement charges by rail for a distance of fifty to seventy-five miles.

An improvement of this character, under the management and control of an experienced roadmaster, appointed by the State, would, when once constructed, be of great service to the people of the interior, by enabling them to forward their eastern bound products without breaking car lots, and a great convenience to the various railroads, by permitting an interchange of cars.

We need not go into details to prove the cumulative benefits to be derived from such an improvement. Seeing the great need for it, we have only to call your attention to the matter to secure such consideration as its merits require.

In this connection we may also call attention to those roads running in connection with ferries. None of them should be permitted to land at other places than ferry slips.

A railroad terminating in San Francisco in connection with its ferryboat, should provide proper accommodations for the safety and comfort of its passengers, and we repeat what our immediate predecessor said upon this subject, under the head of service:

> The service, considering the small volume of business of some of the roads, is generally good. The condition of the roadway and bridges is excellent on those roads having a sufficient amount of traffic to pay for maintenance. For the improvement of the service of those roads which run in connection with ferries to San Francisco, it is recommended that they be required to land their passengers at ferry slips, with passenger-ways separated from those of freight. Waiting rooms also should be provided, in which travelers may find comfortable shelter while waiting the arrival and departure of the steamers.

THE ECONOMY OF CONSOLIDATION.

In the multitude of arguments, pro and con, advanced on the railroad question, considerable has been said against the policy of consolidation. For the benefit of those who have not studied the subject as thoroughly as they would desire, we present the following comparative illustration between the Central Pacific system, which is under one management, and the roads of Massachusetts, which are controlled by sixty-four different managements. The number of miles of Massachusetts road reported is 2,667; the number of miles of road operated by the Central Pacific Railroad Company, is 2,644. The facts and figures of both are for the year 1880. The average cost of the standard gauge roads of Massachusetts is given at $57,057 80 per mile; equipment, $6,613 90; making the total average cost, $63,671 70. The variations of cost per mile range from $24,353 25 to $92,068 30. It will be seen that the miles operated by the Central Pacific and leased lines, and those of Massachusetts, are so nearly the same as to make no material difference in the estimates.

The following table is so simple and clear that all will understand it:

YEAR 1880.

	C. P. R. R. and Leased Lines.	Massachusetts Railroads.	C. P. R. R. and Leased Lines — Per mile.	Massachusetts Railroads — Per mile.	Massachusetts Railroads — Per cent per mile over C. P. R. R. and Leased Lines.	C. P. R. R. and Leased Lines — per cent per mile over Massachusetts Railroads.
Aggregate capital stock	$127,870,364 00	$118,738,871 58	$48,362 46	$44,521 51		8.62
Gross income	20,508,112 88	35,140,374 77	7,756 47	13,175 99	69.86	
Expenses, including rent	12,045,668 89	23,948,559 24	4,555 85	8,979 58	97.12	
Expenses, over operating expenses	8,462,443 99	11,191,815 53	3,200 62	4,196 40	31.12	
Income, over operating expenses	3,406,530 00	5,987,718 64	1,288 40	2,245 11	74.30	
Dividend paid	5,819,794 23	15,920,076 30	2,201 13	5,969 28	17.11	
Passenger earnings	13,245,857 29	17,741,746 39	5,009 77	6,652 32	32.80	
Freight earnings						
Miles of main track	2,644	2,667			00.80	

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By the above it is shown that the gross earnings per mile of the Massachusetts roads were 69.86 per cent greater than those of the Central Pacific, and that it cost them 97.12 per cent more than the Central Pacific, while their net income per mile was 31.12 per cent greater. Their passenger earnings were 17.11 per cent per mile; their freight earnings were 32.80 per cent per mile, and their dividends paid to stockholders, 74.30 per cent per mile greater than the Central Pacific and leased lines, which paid but 2.60 per cent dividend on the aggregate investment, while the Massachusetts roads paid 5.04 per cent; the aggregate capital of the Central Pacific and leased lines, being only 8.62 per cent greater than the roads of Massachusetts. The cost of operating the Central Pacific was about one half the cost of operating the Massachusetts roads. When the fact that the eastern roads obtained labor, fuel, and all kinds of supplies far below the price paid for these necessaries by the Central Pacific, is taken into consideration, a strong argument in favor of consolidation is presented. The people of Massachusetts pay for the maintenance of sixty-four organizations while the patrons of the Central Pacific pay for but one. Despite the remarkable showing in favor of the Central Pacific system, there are no complaints made by the patrons of the Massachusetts roads.

NOTE.—Dividends paid on the Central Pacific stock, six per cent; but, including with the Central Pacific that of side and leased lines, which amount to but 8.62 per cent more than the mileage of the Massachusetts roads, reduces the showing to 2.66 per cent as against the dividends of 5.04 per cent paid by the Massachusetts roads.

REDUCTION OF FARES AND RATES.

Since the organization of this Commission the aggregate reduction of fares and rates over the roads of the Central Pacific system within the State have been very considerable. There have been material reductions in the charges of other transportation companies, but the Central Pacffic is the only one that has supplied us with information sufficient in detail to enable us to make an approximate estimate of the total amount saved to the people by these reductions. Upon the principal products of California, among which may be enumerated barley, beans, brandy, wine, cattle, flour, corn, wheat, hogs, horses, hops, green fruit, wool, mill stuffs, oats, rye, potatoes, and sheep, based on the tonnage of 1880, there were reductions, as compared with 1879, of 13.67 per cent., and in 1881, as compared with 1879, of 22.69 per cent—the reduction, in round numbers, being $588,800 74. On the Central Pacific proportion of through freight charges for the years of 1880 and 1881, as compared with 1879, there is shown a reduction of $1,428,798 37, which, with the reduction of local freight, shows a total saving to the people within a period of two years, of $2,017,599 11. If the rates of 1879 had remained unchanged up to the close of 1881, shippers would have paid on transportation over two million dollars more than they have paid. The figures show a saving on freight alone of more than one million dollars per annum. The managers of the Central Pacific system assure this Board that the proportion of reductions for 1882 will be largely in excess of that of the two previous years. The reduction in the way of special rates, such as round-trip tickets, commutation tickets, etc., of passenger fares, during the years 1880 and 1881, is estimated to be equal to that on freights for the same period. Here, then, is a saving to the people

of nearly *four and a half million dollars* in the short space of two years. Within the year 1882 the shading down of both fares and rates has been very marked. The reductions of the revised freight tariff of the Central Pacific Railroad, which went into effect June 1, 1881, and which included grain, flour, live stock, alfalfa seed, and wool, have already saved to the producers many hundreds of thousands of dollars.

The amount of business done by a railroad is the gauge by which the value of its service must be measured. The capacity of a railroad for carrying purposes is very great—in almost all cases far beyond the demand upon it. The trains must be run even though they carry light loads. The freight cars must go out for the products of the farm without regard to the small quantity of goods sent out from the city. The cost of hauling empty or but partially loaded cars over a road is but little less than hauling them loaded. The amount of service required to operate a road with a business limited to one third its capacity is out of proportion with that of a road doing a business equal to three fourths its carrying capacity. Hence it is that the cost of service decreases in proportionate ratio with the volume of traffic. The business of the Central Pacific and its leased lines is increasing year by year, and the effect is the marked reduction in the cost of service, as stated above. The shading down of rates is a consequence of an increasing volume of business. This shading down approximates a net saving to the shipper of nearly two and a half million dollars per annum during the years of 1880 and 1881. It will exceed this sum for 1882, and we may reasonably expect a proportionate reduction during the years to come. Full harvests, flourishing manufactories, and successful mining operations, are far more reliable guarantees of cheap transportation than may be hoped for from ill-digested legislation or the arbitrary action of this or any other Board of Railroad Commissioners.

THE WHEAT GROWER AND THE RAILROAD.

We have thought that a few comparisons between the cost of moving a staple—wheat, for instance—from the point of production to the place of shipment, or to market, before there were railroad facilities, and now, would be of interest to the farming portion of our population. The beneficial results of extensive railroad communication upon our agricultural and manufacturing interests, are visible on every hand. The average of cultivated land has greatly expanded within the last decade. The average annual export of wheat for 1881 and 1882, was 32,000,000 bushels; while the average per year for the four years ending with 1881, was but 21,000,000. These figures show that, within the past five years, the increase in the average product of wheat in California has been remarkable. The area of fruit orchards and vineyards has also expanded beyond what was thought possible a few years ago. The commerce of San Francisco has kept pace with the growth of the material interests referred to above. The railroad has contributed very materially to the accomplishment of these results, as will be seen from the following details:

Solano County is one of the large wheat producing countries. Along one side of this vast wheat field runs the Sacramento River. Beside Suisun Bay, which penetrates the county from the south for a distance of ten or twelve miles, there are navigable

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sloughs of Main Prairie and other localities, all supplying a means of outlet for wheat on its way to the San Francisco market. Despite these advantages we find that before the era of railroads, the average haul by wagon of the wheat from the field to the water was ten miles, at a cost of two dollars per ton. The cost of shipment per vessel alone was about one fourth more than is now charged by the railroad for delivery at the ship's side or the warehouse in San Francisco harbor. There was often difficulty in getting the wheat moved from where it left the farmer's wagon. Solano County now has two railroads running parallel with each other and with the river, each distant from the other an average of ten miles. The average haul per wagon is now three miles, and the average cost of moving a ton of wheat from the field to the station is seventy-five cents, a net saving of one dollar and twenty-five cents per ton. The annual average of the wheat yield of Solano County is estimated at 125,000 tons. The railroad saves the producer one dollar and twenty-five cents per ton on the first movement of his wheat after it is sacked. If you multiply 125,000 by 125 you will see that railroad facilities save the Solano County wheat grower a large sum annually on the first movement of his products. Throughout the Sacramento and San Joaquin Valleys the haul of products has been shortened and the cost decreased in a greater or less degree by the railroad. The reader will of course see that the cost of moving material of all kinds from the city to the country has been reduced in proportionate ratio.

TWO GREAT COMPETING ROUTES.

When an all-rail route by way of Fort Worth, Texas, enabled the Southern Pacific Railroad to carry California wheat to New Orleans, the tonnage from San Francisco to England declined from $17 to $12 per ton. The quantity of wheat dispatched by rail to Liverpool via New Orleans was small, but it demonstrated as a fact what had before been a mere supposition. It did more than this—it convinced the skeptical that when the Southern Pacific controlled and owned a through rail between this city and New Orleans, a large share of the wheat of California would reach Europe by a new and short route, over which the cost of transportation would be so much less than the cost by ship, that the product of the California farmer could successfully compete in the Liverpool market with the wheat of the Northwestern States. The Southern Pacific road will be completed before this report is placed in type; and, in time for the crop of 1883, the road will have so far perfected its arrangements for moving a large share of our export wheat overland to New Orleans or Galveston, where it will take ship for Liverpool and other European ports. Until the road is finished and the necessary preparations made, the Company will be unable to definitely state the probable rate at which California wheat will be moved to New Orleans by rail and thence by ship to England. The one fact only can now be stated, which is, that before it was known that wheat could be sent via New Orleans, the freight from here to Liverpool ranged from $17 to $20 per ton, and now is but $12. This fact will impress the grain producers of California. The rate is now but $12 per ton by ship, and there is no doubt but that the price will decline to $7 per ton when the railroad is fairly ready to compete with the ships. At present the saving to the producer is $5 to $8 per ton. For the years 1878, 1879, 1880, and 1881, California sent to Europe 84,564,039 bushels of wheat, the average yearly export being 21,141,009 bushels, or 640,640 tons. The railroad is saving the producer $6½ per ton—equal to an annual saving on the average export to Europe of $4,164,160. The average cost of transportation on all wheat brought to the ship over the Central Pacific Railroad and leased lines, during 1881, was $2 14 per ton. It will average a little below this figure for 1882.

When the Southern Pacific road has constructed its own docks, wharves, warehouses, and elevators, at New Orleans and Galveston, and when it shall have completed its arrangements for the necessary ships to carry the wheat from those ports to Liverpool, Havre, and other central markets of Europe, the California wheat grower will have the advantage of a system of transportation that will secure him the very best of carrying facilities at a minimum cost of service. By ship, wheat is from ninety to one hundred and forty days in transit between San Francisco and Liverpool; by the cars and steamers of the Southern Pacific the grain will be moved from the storehouses of the Sacramento and San Joaquin Valleys to Liverpool in from thirty-five to forty days. The saving to the producer from this rapid mode of transportation will aggregate millions of dollars. From this active and endless competition between the car and the ship comes low rates of transportation that will quite double the profit on wheat raising in California. It will bring the market of the old world to the doors of our granaries and the gates of our vineyards. Our wine, wool, and honey, and every article for shipment, will yield a larger profit to the producer through this perpetual competition between sea and rail. One route cannot buy off or destroy the other. There can never exist another tonnage monopoly such as absorbed the entire earnings of our wheat growers a few years ago. We hazard nothing in predicting that within the next half century the ship rate of transportation between San Francisco and Liverpool on wheat will not exceed $12 per ton. The reduction in the time consumed in transit via New Orleans will have a positive value, and this, and what would be the cost of moving the wheat from the point at which it touches the road to the ship, say $2 30 per ton, may be divided between the producer and the railroad carrier, and yet the cost to the producer by either route remains the same. In other words, the wheat grower can afford to pay the railroad the rate charged by the sea route with the cost of moving his crop from the interior to the ship, added, and still be the gainer in time saved by the New Orleans route. The immigration the Pacific Coast so greatly needs will be obtained through the cheap rates offered by the Southern Pacific route. The wheat laden outgoing car and ship will return with the immigrant, who will make his home here and become one of us. The fear has been expressed that the car will drive away the ship, and thus a monopoly of the wheat carrying trade be secured by the railroad. Such a result would be without a precedent. It would be a violation of the established rules of commerce. It cannot happen. The port of San Francisco will never be without vessels. The car and ship will always be in sight of each other. Each will bid against the other. The choice of routes will always rest with the shipper, and down to the actual cost of service he will name the compensation for the transportation he requires. Any other result than this is an

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utter impossibility. Out of this competition of sea and railroad, the producers of California will save millions of dollars annually.

CONCLUSION.

After giving careful attention to the problem of transportation, the reader of railroad history will see that we have reached the same conclusions of all Railroad Commissioners which have preceded us. As the eastern railroad systems extended westward, and the capabilities of that vast country became known, the people welcomed them, and advised the builders "to go farther west," and offered glittering inducements to capitalists to provide railroad facilities. The old channels of commerce served well those who were situated near them; but the necessities of industrial development and the activities of trade demanded new outlets for commerce. This soon began to affect trade centers, and rivalries and antagonisms of a bitter character were thus engendered. The railroads had wrought the change, and no remedy was considered effective short of putting them under Government control. On the seaboard, these commercial rivalries had been active between the great commercial marts for near a century, yet no one thought of seeking Government protection against a successful rival. But this new system, which moved a thousand tons on wheels across the prairies, at a speed of fifteen miles per hour, regardless of the ordinary routes of commerce, was a phenomenon to the western pioneer, and it must be regulated or ruin of old and favored localities would follow.

Laws were enacted and Commissions were created with power to control large properties which the State did not own. As one State into which the roads had penetrated, after a trial of futile restrictive legislation would find upon carefully investigating the subject, instead of ruin, that commercial and industrial development only followed in the wake of the railroads, another State would sound the alarm, and repeat almost identically what the former State had done. Thus, Illinois, Wisconsin, Iowa, Minnesota, Missouri, and some others, have had a similar experience, yet each one of them has developed with marvelous rapidity, through the stimulus thus given them.

Through the impulse the railroad system of the west has given to productive industry, the center of population has been moved from the Alleghany Mountains to the Mississippi River, and the west has become the great grain-producing mart for supplying the world's deficiency.

The amount of breadstuffs in the year 1881 which was transported to the seaboard for export, originating west of Buffalo, was not less in value than $270,000,000. An equal amount was consumed at home east of that line.

The total products of domestic agriculture exported was $730,000,000. This vast amount of the produce of the Western and Northwestern States was, through the network of railroads and waterways, marketed in Europe at a cost to the consumer not exceeding ten per cent of its market value. Of all the grain received at the principal Atlantic ports for the year of 1880, seventy-six per cent was carried by rail. The large increase in the exports to foreign countries during the last few years, is due principally to the reduction in the cost of transportation to the seaboard. Improvements in the rolling stock

and roadway, together with the improved facilities for handling, have made it possible for the railway companies to transport the products of the farmers to market nearly or quite as cheaply as by water routes. Before another decade passes by we may expect to see, even with a free canal, rail and water rates equal. A day's labor in Manchester even now will pay for transportation on a year's supply of flour, a distance of 5,000 miles, for the laborer.

What but the system of railways of the United States has given us the best grain markets of the world, by enabling us to compete with European markets? The gradual reductions in rail rates during the last decade, which have been not less than fifteen per cent on the market value of the products of domestic agriculture, were not made in obedience to any statutory regulation, but were made in response to commercial and industrial activities. As population has increased the universal custom, as far as our knowledge extend, has been to reduce the carriers' rates. This extends the area of agricultural land, furnishes cheap food to the consumer, who pays for the transportation, and affords a fair profit to the producer. It is no more difficult to tell what it will cost to raise next year's crop than it is to tell what it will cost to transport it to market. The farmer will tell you that the cost of raising a cental of wheat cannot be told until all his crop has been marketed. The amount of his crop depends upon circumstances over which he has no control, and the amount has also much to do with the cost of transporting it to market. To establish this year the price of raising wheat next year would be considered by farmers, merchants, and Chambers of Commerce, absurd. Yet many of these good people seem to think it an easy task for legislators to establish the cost of marketing the same.

We might institute other reasons which have controlled our action in dealing with the transportation companies in this State; but we will only refer to the controlling one. No one who reviews the progress of the various industries of the State can fail to see, that thus far in our history, commercial freedom has been the moving cause. Under it, we have seen the great plains bordering the Sacramento and San Joaquin Rivers, converted into great fields of waving grain. The wood-choppers' huts along their banks of twenty-five years ago, have been replaced by stately farm-houses, and it is not an uncommon occurrence for a farmer to load a 2000-ton ship for Europe with the wheat product of his farm. And in one instance, a single farmer has loaded ten ships for Europe, of 1,500 tons each, from the wheat product of his own land. The products of domestic agriculture of the State are double the gold yield in its palmiest days. This great result is an achievement of which any State might well be proud. But it only emphasizes the principle of commercial and industrial freedom in developing our vast natural resources. The waterways of the State are paralleled by railroads, which compete for the traffic. During the decade between 1870 to 1880, the increase in population and consequent consumption has been no less than fifty-seven per cent. This fact contradicts with emphasis the statement, that a blight had fallen upon the industries of the State since the driving of the "golden spike" at Promontory Point in 1869.

The Report of the Superintendent of the Census, and of the Chief of the Bureau of Statistics, prove that the Pacific States are no exception to the law of growth of other American States.

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We cannot better close this report than by quoting Mr. Joseph Nimmo, Chief of the Division of Internal Commerce in 1876:

In adjusting itself to the conditions of the varied interests of society, the railroad system has been and still is passing through the process of an evolution, but it is an evolution, the course of which has always been and always will be hidden. Special efforts at adjustment have failed, and disappointment has overwhelmed many a supposed solution of the whole question. But the general tendency has always been in the direction of progress. The railroad has not only moved toward the commercial, the industrial, and the social habits of the people have shaped themselves to the exigencies of railroad transportation. In the efforts which are now being put forth to settle the various questions touching the relations of the railroads to commerce, to the State, and to each other, men may plan, and they may execute, but unless they build wiser than they know, they will build in vain. Concession and comity must grow into custom, and custom must develop into law. This is the natural course of adjustment; this the way in which every forceful agency becomes a factor in human activity. The most effective instrumentalities in bringing about this desired end will be found to be the diffusion of a knowledge of all the conditions governing the internal commerce of the country.

We may add this: After having carefully examined the reports of the Royal Commission of England, the reports of the Commissioners of several of the principal States of the Union, where restrictive legislation has been tried and proved a failure, we may safely repeat here the conclusions of them all, viz.: "That the development and necessities of trade always have nullified, and inevitably must nullify the special Acts, no matter how carefully and skillfully they may be prepared."

J. S. CONE,
Railroad Commissioner, First District.

C. J. BEERSTECHER,
Railroad Commissioner, Second District.

SUPPLEMENTAL REPORT.

I have united with my remaining colleague in the foregoing report, because I believe the general principles therein set forth and discussed are in the main right, and should control the action of any one who sincerely desires to be guided by just and correct views of the high and responsible duties devolved upon this Board. It will not surprise me to find those principles controverted by persons who have not time or disposition to examine them in the light of experience and the laws governing commercial relations throughout the world. But sooner or later, whatever may be the specific action of my successors in specific cases, they must, to effect permanent good, hold themselves amenable to that experience and those laws. While this is true, I have been governed in some respects in my action as Commissioner by views not always shared by my colleagues, but which I believed would result in most usefulness to the public. It is to give expression briefly to some of these views, and to place more specifically before my constituents the governing motive of my action, that I submit this supplemental report.

Without doubt, the public would have applauded the Board if it had, without investigation or consideration, reduced all fares and freights one half. While recognizing fully my obligations to the people who elected me to office, I could not bring myself to believe that they had a right to expect ignorant and inconsiderate action at our hands, or action grossly unjust to the transportation companies. I believed then, and I believe now, that a reduction was rightfully demanded; but I did not know it, and could not know it without investigation, nor could I know to what extent reduction should be made, or in what manner it could be best and most speedily attained.

My first efforts were directed to the question of cheapening the cost of getting the products of the soil to market. As a farmer myself, I had already found out that the producer in California was working under the disheartening fact that the great grain-producing region of the Northwest, as far out as Dakota, was laying its products on the docks at Liverpool for so much less than we from this coast, that we could not enter that market in competition at all, and often only at a loss, when farmers from that region were making large profits. It was plain to me that our producers traveled so comparatively little by rail that the gain to them, by reducing fares, was of trifling importance compared with reducing their freight charges on products of the soil, and hence this question received my first attention.

How to bring about relief in this direction, whether by litigation or by arbitration, had also to be determined. On this point, at least, one of the Board differed from me. He was at that time opposed to having anything whatever to do with the railroad companies. His idea was to make reductions by the exercise of the powers of the Board, and leave the consequences to take care of themselves; if litigation ensued, and our whole term was frittered away in the Courts

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without results, nobody could blame the Board, and so long as not blamed it would be measurably successful. I believed that by judicious, fair, and impartial treatment of the transportation companies, much could be accomplished, and, if not all we might wish, it would still be better than the loss of everything by the law's delays. The advantage of treating with the companies, instead of resorting to the Courts, may be seen from the result of the suit brought to restrain the Board from regulating the coast lines of steamships. That action was brought in December, 1880, in the United States Circuit Court, and was soon after argued and submitted, and no decision has yet been rendered. When rendered, an appeal to the United States Supreme Court will involve one or two years more delay. Acting under this belief, I sought at once to acquaint myself with the disposition of the chief transportation company of the State towards the Board, and whether its purpose was to resist all reductions, or whether it was willing to make concessions to the industries of the State. I found that great and hitherto all-powerful corporation disposed to enter upon the question of reduction of freights apparently in good faith, if they could feel assured of being met with like good faith by the Board. They did not want to be tricked into making concessions which the Board would use only as a basis for still greater and arbitrary reductions. I saw no reason why I should not, as a public officer, treat these corporations with fairness, and negotiate terms for the people if I could—falling back upon our powers whenever compelled to resort to them—and I saw no reason why I should not avail myself of every opportunity afforded me by resort to the companies' records at their offices, and by intercourse with their employés, in order the better to understand the complex duties of my office. In this view I was sustained by one member of the Board only, the other apparently preferring to accomplish nothing except by absolute non-intercourse and by arbitrary exercise of power.

The Board visited nearly all the shipping points in the State; held public meetings, to which all persons were invited; the wants of shippers were inquired into and their importance considered. Meanwhile every opportunity offered by the companies to disclose the extent to which they would concede the terms asked by the people was taken advantage of, and a body of facts thus collected enabled a majority of the Board to prepare a schedule of reduced freights, which, however, little known to or appreciated by the people, I have the satisfaction of knowing has saved and will hereafter save to the producers very large sums of money. This schedule, after considerable hesitation and some reluctance, was consented to by the chief railway company, and was put in operation without resort to the Courts, on June 1, 1881. It embraced the principal products of the State, to wit: Wheat, corn, barley, oats, rye, flour and mill stuffs, cattle, sheep, hogs, and wool. Any one who will take the trouble to consult this schedule, or will compare his shipping receipts for 1880, with those of 1881 (after June), will see that he has a net gain, through the interference of this Board, of from twenty-five to thirty-three per cent. If he will compute the saving to the people of the State, he will see that it amounts to several hundred thousand dollars per annum, and this advantage will increase every year. I desire also to say, that in nearly every instance the reduction was entirely satisfactory to the people who came before us, and was as great as was demanded by them. This schedule went into force

without the assent or coöperation of the minority member of the Board, who still adhered to his purpose of doing nothing to which the transportation companies would assent.

Parallel with our investigations upon this branch of our duties, we were also gathering facts and acquainting ourselves with the more difficult question of a general freight tariff on goods shipped to the interior, and upon the question of fares. Upon the general classification of freights we were met and beset by the most complex difficulties, and I regret that so little substantial good was accomplished in that direction.

Upon the matter of the reduction of fares we had the same friendly assurances from the companies most interested that we had received as to freights on products of the soil, but we were besought not to press action upon them concurrently with freight reductions, because of the disastrous effect it might have upon their struggle to complete their through line to the Atlantic seaboard. This latter great enterprise I had come to regard as the most important source of relief to the chief industry of the State ever yet undertaken. We had long been completely at the mercy of the ocean vessels, and by combinations of tonnage our farmers were practically working for speculators, and were absolutely helpless. The cheapening of freights to the Bay of San Francisco only added to the gains of tonnage buyers. The Liverpool market had no controlling influence on prices here, but they were regulated by ocean charges. We saw the western farmers making money while we were cultivating the soil and shipping our vastly superior wheat at a loss. I saw no relief except through the controlling power of the Southern Pacific Railroad, and being assured that by this route wheat could be laid down in Liverpool for a rate never afterward to exceed fifteen dollars per ton as against twenty-two and twenty-five dollars per ton, which we had been paying by ocean. I felt it an imperative obligation upon me to abstain from any official action which might seriously cripple this means of relief and destroy a possible saving to the State of from $3,000,000 to $7,000,000 annually in the near future. It seemed to me suicidal to needlessly impede the progress of this important outlet.

After, however, the southern route was assured, and the non-action of our Board was no longer important, I renewed my efforts to have the companies revise and reduce fares, and I was informed that it would be done. In nearly every portion of the State they established a practical reduction by introducing reduced round trip tickets and putting on second class cars; still this did not seem to me to quite meet their duty to the public or their promises, and at length, despairing of securing the reduction without the exercise of the power of the Board, I introduced a resolution fixing the maximum of four cents per mile.

The efforts I have made to secure the passage of the resolution are fresh and need not be recalled. I had no doubt that I could count now upon the coöperation of the minority member, who had all along affected to want to do what this resolution proposed. He became the candidate of one of the political parties of the State for Governor and was elected. All his previous pledges, and every sense of duty, seemed to me to require that he should remain on this Board until some action was taken as to fares. Numerous and high precedents were at hand for his continuing to exercise the powers of Railroad Commissioner up to the time of his induction into office as

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Governor; there was no possible or conceivable impropriety in it whatever; the people had a right to expect this of him; he, however, made haste to resign, and at the last I stood alone to record my vote for a reduction of fares.

In taking leave of my office as Railroad Commissioner, I do so with a consciousness of having endeavored to serve the people faithfully as far as I could from my standpoint. Freights have been very materially reduced, and fares also to a large extent. I fully realize that much more remains to be done, but, looking back, I am still convinced that, had the Board forced the issue into the Courts, we would be to-day where we were three years ago, and our producing classes would have suffered immeasurably more than they have by the course pursued. However permanent and substantial have been these benefits to the public, I cannot hope, at this time, for a fair judgment from a people who have so recently elevated to a high place the one member of the Board who has refused to take part in the only measures of relief proposed, and who, at the last, turned away from performing a signal act of duty plainly incumbent upon him. If I was mistaken in my judgment as to how best to perform my duties, I can, in all faith, submit the rectitude of my conduct to the scrutiny of the world.

J. S. CONE.

FINANCIAL STATEMENTS.

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STATEMENT No. 1.

Of Annual Bonded and Sinking Fund Liabilities of the Central Pacific Railroad Company.

Character of Bonds.	Series	Date of Bonds.	Amount of Bonds Outstanding.	When Due.	Rate of Interest.	Interest—When Payable.	Amount of Interest Annually.	Sinking Funds Annually.	Total Interest and Sinking Funds Annually.
California State Aid	O	July, 1864	$1,500,000	July, 1884	7	By State	$105,000 00	$50,000 00	$50,000 00
Central Pacific First Mortgage	A	July, 1865	2,995,000	July, 1896	6	January and July	179,700 00		
Central Pacific First Mortgage	B	July, 1866	1,000,000	July, 1896	6	January and July	60,000 00	50,000 00	432,680 00
Central Pacific First Mortgage	C	July, 1866	1,000,000	July, 1896	6	January and July	60,000 00		
Central Pacific First Mortgage	D	July, 1866	1,383,000	July, 1896	6	January and July	82,980 00		
Central Pacific First Mortgage	E	July, 1867	3,997,000	July, 1897	6	January and July	239,820 00		
Central Pacific First Mortgage	F	July, 1868	3,999,000	July, 1898	6	January and July	239,940 00		
Central Pacific First Mortgage	G	July, 1868	3,999,000	July, 1898	6	January and July	239,940 00	50,000 00	1,229,300 00
Central Pacific First Mortgage	H	July, 1868	3,999,000	July, 1898	6	January and July	239,940 00		
Central Pacific First Mortgage	I	July, 1868	3,511,000	July, 1899	6	January and July	210,660 00		
Western Pacific	A	July, 1869	2,735,000	July, 1879	6	January and July	*164,100 00	25,000 00	189,100 00
United States Aid	B	July, 1864	27,855,680	July, 1898	6		*1,671,340 80	1,050,000 00	2,721,340 80
California and Oregon Mortgage	A	July, 1868	6,000,000	July, 1888	6	January and July	360,000 00	100,000 00	584,800 00
Central Pacific, California & Oregon	B	July, 1872	2,080,000	July, 1892	6	January and July	124,800 00		
San Francisco, Oakland & Alameda		July, 1872	687,000	July, 1890	8	January and July	54,960 00	100,000 00	154,960 00
San Joaquin Valley Railroad		October, 1870	6,080,000	October, 1900	6	April and October	364,800 00	50,000 00	414,800 00
Land Grant		October, 1878	6,660,000	October, 1900	6	April and October	399,600 00	329,500 00	399,600 00
Income Bonds		May, 1878	3,285,000	May, 1888	8	May and November	262,800 00		591,300 00
Totals			$82,565,680				$4,955,380 80	$1,853,500 00	$6,758,880 80

* Includes the interest due the United States Government on the bonds issued in aid of the construction of said road. Until further legislation, a portion of the interest only is paid, equaling twenty-five per cent of the net earnings of that portion of the road which received Government aid in bonds and lands. The amount varies as the net earnings increase or decrease.

STATEMENT No. 2.

Summary of Actual Annual Liabilities of the Central Pacific Railroad Company on Account of Bonded Interest and Sinking Funds.

Mortgage, etc., bonds, $3,000,000 at 8 per cent		$240,000 00
Mortgage, etc., bonds, *$2,983,000 at 7 per cent		103,810 00
Mortgage, etc., bonds, $50,411,000 at 6 per cent		3,024,660 00
Total		$3,368,470 00
Thurman Bill Sinking Fund, 25 per cent net earnings	†$1,072,583 80	
Mortgage, etc., Bonds Sinking Funds	1,060,000 00	
		2,132,583 80
Total Interest and Sinking Fund		$5,501,053 80

CONTINGENT LIABILITIES.

Guaranteed bonds, California Pacific Railroad Co., $3,600,000 at 6 per cent	$216,000 00
Guaranteed bonds, California Pacific Railroad Co., $1,000,000 at 3 per cent	30,000 00
Guaranteed bonds, Stockton and Copperopolis Railroad Co., $500,000 at 5 per cent	25,000 00
Total	$271,000 00

* Interest on State Aid 7 per cent Bonds, $1,500,000, paid by the State of California.

† The sum here given is on the basis of the amount due for the six months ending December 31, 1878, $536,291 90. This amount, of course, varies yearly.

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STATEMENT No. 3.

Showing the Length of the Main Line and Branches of the Pennsylvania Railroad, its Share, Capital, and Debts, Gross Earnings, Earnings per Mile, Total Tons Moved, Tons Carried One Mile, Rate per Ton per Mile of Freight, and Rate per Mile for Passengers, from 1870 *to* 1880, *inclusive.*

YEAR.	Miles of Railroad Operated.	Stock and Debts.	Earnings—Freight.	Earnings—Passengers.	Gross Earnings.	Earnings per Mile.	Tons of Freight Moved.	Tons of Freight Moved One Mile.	Freight per Ton per Mile.	Rate per Mile for all Passengers.
1870	737	$66,610,090	$12,793,160	$3,757,942	$17,531,707	$23,788	5,427,401	825,979,692	1.549	2.496
1871	737	75,757,680	14,052,305	3,875,657	18,719,837	25,400	6,575,843	1,011,892,207	1.389	2.536
1872	784	88,344,246	16,856,891	4,262,018	22,012,525	28,204	7,844,778	1,190,144,036	1.416	2.450
1873	869	111,290,250	19,608,555	4,399,671	24,886,009	28,637	9,211,234	1,384,831,970	1.416	2.480
1874	877	118,306,485	17,227,505	4,258,888	22,642,371	28,098	8,626,946	1,372,566,972	1.255	2.430
1875	905	128,188,681	15,651,741	3,7 2,306	20,493,252	22,534	9,115,368	1,479,414,466	1.058	2.351
1876	963	128,976,429	14,539,784	5,368,571	20,788,076	21,680	9,922,911	1,629,742,021	0.892	1.862
1877	1,055	129,976,647	14,642,109	3,383,273	18,983,456	18,000	9,738,295	1,494,798,198	0.980	2.363
1878	1,054	129,619,063	15,904,501	3,348,346	20,317,140	19,280	10,946,752	1,732,003,131	0.918	2.357
1879	1,092	129,117,956	17,016,989	3,628,273	21,743,628	19,902	13,684,041	2,136,708,887	0.796	2.281
1880	1,120	130,916,504	20,234,046	4,437,146	25,987,658	23,203	15,364,788	2,298,317,323	0.880	2.253

STATEMENT No. 4.

Showing the Earnings of Tons of Freight Moved, and Tons of Freight Moved One Mile, and the Rates per Ton per Mile Charged by the Chicago & Alton, the Chicago, Burlington & Quincy, the Chicago, Milwaukie & St. Paul, the Chicago & Rock Island, the Illinois Central, the LakeShore & Michigan Southern, and Michigan Central Railroads, from 1870 *to* 1880, *inclusive.*

YEAR.	Chicago & Alton.	Chicago, Burlington & Quincy.	Chicago, Milwaukie & St. Paul.	Chicago & Northwestern.	Chicago & Rock Island.	Illinois Central.	Lake Shore & Michigan Southern.	Michigan Central.	Average for all.	Rate in Cents Per Ton Per Mile.
1870	$3,372,068	$4,514,629	$5,116,141	$8,187,597	$3,587,002	$5,142,521	$8,746,126	$2,629,438	$42,290,522	
1871	3,740,203	4,949,684	4,444,568	7,700,809	4,025,277	6,086,713	10,341,218	3,072,557	44,363,029	
1872	3,607,543	5,299,874	4,566,991	7,521,275	4,213,372	5,865,614	12,824,862	3,398,345	47,297,976	
1873	3,897,452	8,055,349	6,421,369	8,614,260	4,597,982	6,063,364	14,192,399	3,852,933	55,675,118	
1874	3,446,881	8,445,909	5,137,152	10,270,519	5,301,000	7,700,573	11,918,358	4,744,839	57,667,217	
1875	3,173,531	8,502,617	5,690,568	9,549,430	5,292,412	5,490,995	9,639,038	4,417,276	51,755,867	
1876	3,541,346	8,821,225	5,384,230	9,832,972	5,121,577	4,748,355	9,405,629	4,158,887	51,014,221	
1877	3,067,769	9,834,544	5,627,906	9,500,279	4,708,146	4,535,406	9,476,607	4,316,616	50,292,434	
1878	3,409,510	11,152,179	5,750,497	10,754,168	5,575,733	5,024,070	10,048,952	4,646,248	56,361,357	
1879	4,242,791	11,650,622	5,850,755	10,637,367	6,929,926	5,099,156	11,288,261	4,986,988	61,685,868	
1880	5,808,484	16,054,209	8,884,226	12,897,777	8,055,165	5,871,832	14,077,294	6,195,971	77,824,956	
				TONS OF FREIGHT CARRIED.						
1870	1,261,432	1,052,754	1,522,753	2,220,978	856,668	1,623,994	2,978,725	823,770	12,303,084	
1871	1,501,495	1,382,575	1,463,155	2,298,170	914,345	1,831,944	3,784,525	1,105,875	14,282,025	
1872	1,641,791	1,689,104	1,697,826	2,510,016	1,014,348	2,039,320	4,443,092	1,238,313	16,273,819	
1873	1,642,443	2,221,744	1,791,564	2,958,390	1,286,966	2,057,360	5,176,661	2,186,786	19,321,854	
1874	1,421,158	2,420,628	1,735,535	3,591,090	1,399,883	2,069,935	5,221,267	2,345,466	20,204,482	
1875	1,545,842	2,396,933	1,832,527	3,153,315	1,717,727	2,016,424	5,022,496	2,686,148	20,371,512	
1876	1,818,235	2,892,614	1,765,801	3,471,927	1,640,000	1,899,627	5,635,167	3,056,386	22,179,757	
1877	1,560,188	3,249,625	1,687,057	3,413,398	1,651,409	1,803,044	5,513,398	2,830,000	21,708,119	
1878	1,967,306	3,975,010	1,955,699	3,971,261	1,768,118	2,067,832	6,098,445	2,786,646	24,560,317	
1879	2,634,177	4,686,353	2,559,734	4,265,937	2,336,270	2,324,485	7,541,294	3,513,819	29,862,069	
1880	3,071,788	6,639,186	3,260,353	5,574,635	2,966,763	2,703,582	8,350,356	3,797,137	36,363,790	
				NUMBER OF TONS CARRIED ONE MILE.						
1870	144,000,000	147,409,207	181,428,573	364,447,240	130,683,871	265,409,400	514,035,571	190,606,687	1,899,320,549	2.227
1871	170,000,000	206,949,500	173,676,258	268,417,381	151,864,519	262,150,400	703,670,591	216,739,727	2,183,488,482	2.032
1872	180,000,000	240,857,009	187,361,638	287,764,006	168,764,519	272,290,900	924,844,140	246,078,512	2,512,960,724	1.882
1873	182,300,000	418,385,184	257,638,532	366,445,480	219,394,094	275,303,400	1,053,927,189	313,401,088	3,070,824,967	1.813
1874	162,306,676	445,686,222	259,158,288	461,412,039	249,523,401	273,559,200	999,342,081	318,366,003	3,169,033,910	1.820
1875	168,923,879	436,263,161	272,539,502	454,550,357	287,913,578	284,650,900	943,336,161	396,046,422	3,244,167,960	1.596
1876	217,835,161	476,822,998	264,808,027	503,132,389	267,511,380	264,602,300	1,133,134,828	473,837,807	3,692,384,890	1.416
1877	211,947,565	655,636,293	271,598,123	485,357,900	276,199,164	249,345,900	1,080,005,561	552,373,503	3,781,864,513	1.330
1878	248,286,318	952,230,000	321,818,902	623,768,593	370,436,382	306,345,700	1,340,467,826	548,053,707	4,691,407,423	1.202
1879	402,234,396	1,138,783,772	401,595,734	681,878,311	610,859,804	335,470,800	1,733,423,440	721,719,412	6,326,175,669	0.975
1880	484,474,730	1,624,461,793	504,876,151	865,909,542	686,458,954	381,288,400	1,857,166,018	735,611,995	7,134,247,668	1.090

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STATEMENT No. 5.

Showing the Length of its Lines, Stock and Debts, Earnings from Freight, Earnings from Passengers, Gross Earnings, Earnings per Mile, Tons Freight Moved, Tons Freight Moved One Mile, Freight Earnings per Ton per Mile of all Freight Moved on the New York Central and Hudson River Railroad, from 1870 *to* 1880, *inclusive.*

YEAR.	Miles Railroad Operated	Stock and Debt	Earnings—Freight	Earnings—Passenger	Gross Earnings	Tons Freight Moved	Gross Earnings per Mile	Tons Moved One Mile	Freight Earnings per Ton per Mile	Passenger Earnings per Mile	Passengers per Mile	Number Men Employed 1880	Aggregate of Wages Paid	Amount per Man	Per Cent of Total Working Expenses
1870	842	$103,660,137	$14,327,418	$6,738,592	$22,363,320	4,122,000	26,550	769,087,777	1.853	------	------				
1871	845	104,660,049	14,647,508	6,224,740	21,972,105	4,532,056	26,002	888,327,865	1.649	------	------				
1872	857	105,924,320	16,259,650	6,662,007	25,580,676	4,393,965	29,732	1,020,908,885	1.592	------	------				
1873	858	117,158,883	19,616,018	6,999,456	29,907,123	5,522,724	34,856	1,246,650,063	1.573	------	------				
1874	1000	127,913,043	20,348,725	7,497,356	29,497,095	6,114,678	29,497	1,391,560,708	1.462	------	2.14				
1875	1000	129,431,968	17,899,702	7,276,848	26,585,415	6,001,984	26,585	1,404,008,029	1.275	------	2.12				
1876	1000	129,273,033	17,593,265	6,762,967	25,791,486	6,803,680	25,791	1,674,447,055	1.051	------	1.91½				
1877	1000	129,229,533	16,424,317	6,576,816	24,389,085	6,351,356	24,389	1,619,948,685	1.014	------	2.07				
1878	1018	129,229,533	19,045,830	6,022,956	24,405,017	7,695,418	23,973	2,042,765,132	0.930	------	2.00½				
1879	1018	129,161,808	18,270,250	5,950,102	25,747,558	9,015,753	24,309	2,295,827,387	0.796	------	2.015				
1880	1018	129,161,633	22,199,966	6,611,160	30,318,946	10,533,038	29,782	2,525,139,145	0.879	------	2.00	13,164	$6,850,884 15	$520 40	38.4-10

STATEMENT No. 6.

Showing the Length of its Lines, Stock and Debts, Earnings from Freight, Earnings from Passengers, Gross Earnings, Tons of Freight Moved, Tons Moved One Mile, Gross Earnings per Mile, Earnings per Ton per Mile of all Freight Moved on the New York, Lake Erie, and Western Railroad, from 1870 *to* 1880, *inclusive.*

YEAR.	Miles Railroad Operated.	Stock and Debts.	Earnings—Freight.	Earnings—Passenger.	Gross Earnings.	Earnings per Mile.	Tons Freight Moved.	Tons Freight Moved One Mile.	Freight per Ton per Mile.
1870	846	$106,935,710	$11,983,547	$3,968,899	$16,179,461	$19,125	4,852,505	898,862,718	1.333
1871	914	112,735,710	12,861,999	3,972,064	17,168,005	18,783	4,701,649	897,446,728	1.442
1872	959	115,449,211	14,509,747	3,329,346	18,371,887	19,157	5,464,274	950,708,902	1.527
1873	959	127,168,158	15,015,807	3,651,554	20,012,606	20,868	6,312,702	1,032,986,809	1.115
1874	959	134,665,927	13,740,042	3,765,574	18,598,898	19,394	6,364,276	1,047,420,238	1.311
1875	942	142,230,365	12,287,399	3,461,304	16,876,858	17,916	6,239,943	1,016,618,050	1.208
1876	957	141,967,784	11,429,929	3,427,626	15,852,461	16,565	5,972,818	1,040,431,921	1.099
1877	958	142,694,940	10,647,807	3,220,090	14,708,890	15,359	6,182,450	1,114,586,220	0.955
1878	928	152,634,300	11,914,480	3,070,121	15,644,978	16,858	6,150,468	1,224,763,718	0.973
1879	928	94,310,064	12,233,418	3,118,944	15,942,023	17,178	8,212,641	1,569,222,417	0.786
1880	1,010	150,688,245	14,391,115	3,682,951	18,693,108	18,508	9,188,297	1,721,112,095	0.836

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STATEMENT No. 7.

Showing the Number of Miles Operated, the Total Tonnage Moved, the Number of Tons Moved One Mile, and Rate per Ton per Mile over the Fort Wayne and Chicago Railway, from 1870 *to* 1880, *inclusive.*

YEAR.	Miles Operated.	Tons Moved.	Tons Moved One Mile.	Freight Earnings.	Earnings per Ton per Mile.
1870	468	1,740,585	336,084,380	$4,892,326	1.45
1871	468	2,047,114	391,035,801	5,581,051	1.43
1872	468	2,407,018	487,852,472	6,851,374	1.46
1873	468	2,292,644	479,917,429	6,716,399	1.40
1874	468	2,309,128	464,696,190	5,841,961	1.26
1875	468	2,496,148	491,289,899	5,430,511	1.11
1876	468	2,604,767	563,406,267	5,266,172	0.93
1877	468	2,690,735	439,998,381	4,790,424	1.01
1878	468	3,026,250	637,470,506	5,600,458	0.88
1879	468	3,679,382	803,083,260	6,066,594	0.76
1880	468	3,865,675	806,257,399	7,359,452	0.91

STATEMENT No. 8.

Showing the Length of Main Line and Branches and Leased Lines of the Central Pacific Railroad Company, its Paid-up Capital and other Liabilities; Freight Earnings; Passenger Earnings; Gross Earnings; Earnings per Mile; Tons of Freight Moved; Tons of Freight Moved One Mile; Rate per Ton per Mile; Rate per Mile for Passengers; Number of Men Employed; Amount Paid for Labor, and the Percentage so paid of the Gross Expenses from 1876 *to* 1881, *inclusive.*

YEAR.	Miles of Railroad Operated.	Capital Stock and Debts.	Earnings—Freight.	Earnings—Passenger.	Gross Income.	Earnings per Mile.	Tons of Freight Moved.	Tons of Freight Moved One Mile.	Average per Ton per Mile.	Average per Mile for Passengers.	Number of Men Employed.	Amount Paid for Labor.	Amount Paid Each.	Per Cent of Expenses for Labor.
1876	1,426				$16,994,216	$11,925	1,441,088	362,713,088	*3.000					
1877	1,763	$139,666,654	$10,988,246	$5,483,704	16,471,417	9,237	1,413,919	319,652,597	3.040					
1878	2,118	137,048,406	10,802,276	5,284,913	17,530,858	8,274	1,785,474	391,018,806	2.730					
1879	2,318	135,750,217	10,934,573	6,842,307	17,153,163	7,396	1,873,152	448,111,616	2.450					
1880	2,467	141,384,310	13,245,857	5,819,798	20,508,112	8,312	2,141,396	564,368,807	2.340					
1881	2,707	144,656,195	15,842,140	6,692,828	24,094,100	8,900	2,736,777	730,719,459	2.116					

* Nearly.

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THE BLANK FORM OF REPORT

FURNISHED TO EACH

Railroad Company in the State by the Commissioners.

15 *

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THE BLANK FORM OF REPORT FURNISHED.

NOTE.—The following blank form of Annual Report was furnished by the Railroad Commissioners to each railroad company in the State, for the years ending December 31, 1880 and 1881.

[Title Page.]

Annual Report of the_____Rail____Company, to the Board of Railroad Commissioners of the State of California, for the year ending December 31, 1881.

[Fly-Leaf.]

GENERAL INSTRUCTIONS.

OFFICE OF THE BOARD OF RAILROAD COMMISSIONERS,
SAN FRANCISCO,_____, 1881.

To the _____*Rail*_____*Company:*

1. Blanks are herewith furnished for the annual reports to be made by you to this office for the year ending December 31, 1881.

These reports are to be completed and forwarded to the Board of Railroad Commissioners, at 320 Sansome street, San Francisco.

The facts and statistics deduced from the questions proposed are to be tabulated and incorporated into the *printed* report of the Commissioners.

Explanations, when required, will be promptly given by letter, or, if necessary, in person, and it is earnestly requested that you commence forthwith the preparation of your reports, so that all correspondence necessary to the understanding of the questions proposed should be completed before making the returns to this office.

If answers to any of these questions proposed cannot conveniently be inserted in the blank spaces left in the tables, they may be set forth in separate sheets appended.

☞Please acknowledge receipt.

By order of the Board of Railroad Commissioners.

_____ Secretary.

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[Page 1.]

_____ *Rail*_____ *Company.*

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

_____

_____

BUSINESS ADDRESS OF THE COMPANY:

_____

The_____Rail_____Company was incorporated_____, 18__, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

1		2		3	
Names of Railroad Companies	Dates of Incorporation	Names of Railroad Companies	Dates of Incorporation	Names of Railroad Companies	Dates of Incorporation

NOTE.—In column 1, place the companies consolidated into the present company; and in each succeeding column, the companies consolidated into those named in the preceding column.

[Page 2.]

_____ *Rail*_____ *Company.*

CAPITAL STOCK.

1. Capital stock authorized by charter*	$	
2. Capital stock authorized by votes of company		
3. Capital stock issued [number of shares_____]; amount paid in		
4. Capital stock paid in on shares not issued [number of shares_____]		
5. Total amount paid in as per books of the company		
6. Amount of capital stock issued but not full paid		
7. Amount per share still due thereon		
8. Par value of shares issued		
9. Total number of stockholders [_____]		
10. Number of stockholders in California [_____]		
11. Amount of stock held in California		
DEBT.		
12. Funded debt as follows:		
Bonds		
Interest paid on same during year [_____]		
Certificates of indebtedness		
Interest paid on same during year [_____]		
13. Total amount of funded debt†	$	
14. Unfunded debt:		
Incurred for construction, equipment, or purchase of property	$	
All other debts, current credit balances, etc.		
15. Total amount of unfunded debt		
16. *Total gross debt liabilities*	$	
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets	$	
Cash on hand		
Materials and supplies on hand		
Sinking funds		
Other securities and debt balances		
18. *Total net debt liabilities*	$	

* By original articles of incorporation. † For details, see Pages 36, 37, and 38.

[Page 3.]

_____ *Rail*_____ *Company.*

19. Amount of bonds or stock of other companies guaranteed, principal or interest, or on which interest is paid by this company, giving name of each		
_____		
_____		
20. Amount of claims against the company which for any reason have not been entered upon the books	$	
_____		
_____		
	$	

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[Page 4.]

_____ Rail_____ *Company.*

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

	To December 31, 1881.
1. Grading and masonry	$
2. Bridging	
3. Superstructure, including rails	
4. Land	
Land damages	
Fences	
5. Passengers and freight stations	
6. Engine houses, car sheds, and turn-tables	
7. Machine shops, including machinery and tools	
8. Interest	
9. Engineering	
Agencies, salaries, and other expenses during construction	
10. _____Branch, [original cost, $_____;] purchsed for	
_____Branch, [original cost, $_____;] purchsed for	
11. Total cost of construction	$

Equipment.

	Number	To December 31, 1881. Cost.
12. Locomotives		$
13. Snow plows on wheels		
14. Parlor cars		
15. Sleeping cars		
16. Passenger cars		
Mail cars		
Baggage cars		
17. Freight cars		
Other cars		
18. Total for equipment		$

[Page 5.]

_____ Rail_____ *Company.*

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

19. *Lands.*

Give a description of the land, and in what town or city and county located. If not used in business of road, so state.

	To December 31, 1881.
	$

20. *Stock of other roads.*

Specifying Each.	To December 31, 1881. Number of Shares.	Price Paid. Per Share.	Price Paid. Total.
		$	$

21. *Bonds of other roads.*

Specifying Each.	To December 31, 1881. Nominal Amount.	Price Paid.
	$	$

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[Page 6.]

_____ *Rail*___ ___ *Company.*

PROPERTY PURCHASED, ETC.—Continued.

22. *Other Securities.*

Specify Each.	To December 31, 1881.	
	Nominal Amount.	Price Paid.
	$	$

23. *Steamboat Property.*

Specify Each.	To December 31, 1881.	
	Nominal Amount.	Price Paid.
	$	

[Page 7.]

_____ *Rail*_____ *Company.*

PROPERTY PURCHASED, ETC.—Continued.

24. *Investments in transportation lines.*

Specify Each.	To December 31, 1881.	
	Nominal Amount.	Price Paid.
	$	$

25. *Other property purchased.*

Specify Each.	To December 31, 1881.	
	$	$

26. Total for property purchased, etc.	$
27. Whole amount of permanent investments	
28. Property in California	
29. Amount of supplies and materials on hand	
30. Cash and cash assets	
31. *Total property and assets of the company*	

[Page 8.]

_____ *Rail*_____ *Company.*

32. SINKING AND CONTINGENT FUNDS.

Showing amount of same and their purpose.

Applicable to Redemption of what Bonds.		Terms and Conditions of Funds.	Total to December 31, 1881.			Received during year	Applied during year	On hand Dec. 31, 1881
Character.	Series.		Invested.	Applied.	On hand.			

[Page 9.]

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry	$
2. Bridging	
3. Superstructure, including rails	
4. Land	
Land damages	
Fences	
5. Passenger and freight stations	
Woodsheds and water stations	
6. Engine houses, car sheds, and turn-tables	
7. Machine shops	
8. Engineering, agencies, salaries, and other expenses during construction	
9. Locomotives [No.____]	
10. Snow plows on wheels [No.____]	
11. Parlor cars [No.____]	
12. Sleeping cars [No.____]	
13. Passenger, mail, and baggage cars [No.____]	
14. Freight and other cars [No.____]	
15. Purchase of other roads, specifying what	

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[Page 10.]

_____ *Rail* _____ *Company.*

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR—Continued.

Amount brought forward from page 9	$	
16. Subscriptions or loans to other roads, specifying same		
17. Any other expenditures charged to property account, specifying same		
18. *Total*	$	
19. Property sold and credited to property account during the year, specifying same		
20. *Net addition to property account for the year*	$	

[Page 11.]

_____ *Rail* _____ *Company.*

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$	
2. Derived from passengers from and to other roads, over roads operated by this company		
3. Derived from other roads as tolls for use of passenger cars		
4. Derived from other sources belonging to passenger department		
5. Derived from express and extra baggage		
6. Derived from mails		
7. *Total earnings from passenger department*	$	
8. Derived from local freight on roads operated by this company	$	
9. Derived from other roads as tolls or for use of freight cars		
10. Derived from freight from and to other roads on joint tariff		
11. Derived from other sources belonging to freight department		
12. *Total earnings from freight department*	$	
13. Derived from rents for use of road and equipment when leased	$	
14. *Total transportation earnings*	$	
15. Earnings per mile of road operated	$	
16. Earnings per train mile (total passenger and freight)		
	$	

[Page 12.]

_____ *Rail* _____ *Company.*

REVENUE FOR THE YEAR—Continued.

Amount brought forward from page 11	$	
17. Income derived from rent of property, other than road and equipment, specifying same		
18. Income derived from all other sources (including accretions from sinking funds, investments in stock, bonds, steamboat property, transportation lines, etc.), specifying same		
19. *Total income derived from all sources*	$	

[Page 13.]

_____ *Rail* _____ *Company.*

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I.—General traffic expenses.

1. Taxes—State and local	$	
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV		
3. Insurance premiums and losses by fire, and damages for fires set by engines		
4. Telegraph expenses		
5. *Total*	$	
6. Proportion belonging to passenger department*	$	
7. Proportion belonging to freight department*		

* NOTE BY COMMISSIONERS.—Computed on *gross receipts* from passenger and freight departments. If computed on different basis, state accordingly.

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[Page 14.]

.....Rail.....Company.

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR—Continued.

Class II.—Maintenance of ways and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$	
2. Iron rails laid, deducting old rails taken up. (Number of miles.....; weight per yard.....)		
Number of miles.....; weight per yard		
Number of miles.....; weight per yard		
3. Steel rails laid, deducting old rails taken up. (Number of miles.....; weight per yard.....)		
Number of miles.....; weight per yard		
Number of miles.....; weight per yard		
4. New ties. (Number.....;) cost		
5. Repairs of bridges		
6. Repairs of buildings and fixtures (stations and turn-tables)		
7. Repairs of and additions to machine shops and machinery		
8. Repairs of fences, road crossings, and signs		
9. Removing ice and snow		
10. Repairs of locomotives		
11. New locomotives, charged to operating expenses		
12. Repairs of snow plows		
13. New snow plows, charged to operating expenses		
14. Fuel for engines and cars:		
Number of cords of wood.....; cost		
Number of tons of coal.....; cost		
15. Water and water stations		
16. Fuel for stations and shops		
17. Oil and waste		
18. Switchmen, watchmen, flag and signalmen		
19. *Total*	$	
20. Proportion of same to passenger department*	$	
21. Proportion of same to freight department*		
22. Of the above there was expended for other than *ordinary* repairs		

*NOTE BY COMMISSIONERS.—Computed on *gross receipts* from passenger and freight departments. If computed on different basis, state accordingly.

[Page 15.]

.....Rail.....Company.

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR—Continued.

Class III.—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars	$	
2. New passenger, mail, and baggage cars (charged to operating expenses)		
3. Damages and gratuities, passengers		
4. Salaries, wages, and incidentals of passenger trains		
Salaries, wages, and incidentals of ferries		
5. Salaries, wages, and incidents of passenger stations		
6. Amount paid other corporations or individuals not operating roads, for use of passenger cars and repair of same		
7. Amount paid other roads for balance of mileage of passenger cars		
8. *Total*	$	

[Page 16.]

.....Rail.....Company.

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR—Concluded.

Class IV.—Freight traffic expenses.

1. Repairs of freight cars	$	
Repairs of dump and work cars		
2. New freight cars (charged to operating expenses)		
3. Damages and gratuities, freight		
4. Salaries, wages, and incidentals of freight trains		
Salaries, wages, and incidentals of ferries		
5. Salaries, wages, and incidentals of freight stations		
6. Paid corporations or individuals not operating roads for use of freight cars		
7. Amount paid other roads for balance of mileage of freight cars		
8. *Total*	$	
9. Total expenses of operating the road embraced in Classes I, II, III, and IV	$	
10. Per train mile (total passenger and freight)	[ ]	
11. Percentage of expenses to total transportation earnings	[ ]	
12. Amount paid other companies as rent for use of road, specifying each company, the amount and basis on which rent is computed		
13. *Total expenses*	$	

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[Page 17.]

_____ *Rail* _____ *Company.*

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$	
2. Percentage of same to capital stock and net debt		
3. Percentage of same to total property and assets		
4. Interest accrued during the year:		
On funded debt	$	
On other debt		
Total		
5. Dividends declared (____ per cent.) for the year. Amount		
6. Date of last dividend declared [____]		
7. Balance for the year, or surplus (or deficit)		
8. Surplus (or deficit) at commencement of the year [____]		
Deduct or add entries made in profit and loss account during the year, not included in the foregoing statement [____]		
9. Surplus (or deficit) at commencement of the year, as changed by aforesaid entries		
10. Total surplus (or deficit), December 31, 1881		
11. Paid to sinking funds, in hands of Trustees		

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. *Total earnings* from Passenger Department, as per "*Revenue for the Year*," No. 7.	$	
2. Per passenger train mile		
3. Expenses, proportion of "*General Traffic Expenses*," as per Class I, No. 6		
4. Expenses, proportion of "*Maintenance of Ways and Buildings, and Movement Expenses*," as per Class II, No. 20		
5. Expenses, "*Passenger Traffic*" as per Class III, No. 8		
6. *Total expenses*		
7. Per passenger train mile		
8. *Net earnings*		
9. Per passenger train mile		

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. *Total earnings* from Freight Department, as per "*Revenue for the Year*," No. 12.	$	
2. Per freight train mile		
3. Expenses, proportion of "*General Traffic Expenses*," as per Class I, No. 7		
4. Expenses, proportion of "*Maintenance of Ways and Buildings, and Movement Expenses*," as per Class II, No. 21		
5. Expenses, "*Freight Traffic*," as per Class IV, No. 8		
6. *Total expenses*		
7. Per freight train mile		
8. *Net earnings*		
9. Per freight train mile		

[Page 18.]

_____ *Rail* _____ *Company.*

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

	December 31, 1881.
DEBITS.	
Cost of road	$
Cost of equipment	
Other investments	
Supplies and materials on hand	
Sinking funds in hands of Trustees	
Cash, cash assets, and other items (specifying same)	
Profit and loss (loss, if any)	
Total	$
CREDITS.	
Capital stock	$
Funded debt	
Other debts (specifying same)	
Profit and loss (profit, if any)	
Total	$

[Page 19.]

_____ *Rail* _____ *Company.*

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
	$	$

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[Page 20-23.]

----------Rail------Company.

DESCRIPTION OF ROAD.

	Date of Opening.
1. Date when the road or portions thereof were opened for public use:	
From---------- to ----------	----------
From---------- to ----------	----------

[Page 24.]

----------Rail------Company.

DESCRIPTION OF ROAD—Continued.

2. Length of main line of road from ----------to----------	----------
Length of main line in California ----------	----------
Length of main line in other States ----------	----------
3. Length of line with track laid, if road is not completed----------	----------
4. Length of double track on main line----------	----------
5. Branches owned by the company ----------	----------
(Names and description of; single or double track) ----------	----------
6. Total length of branches owned by the company----------	----------
7. Total length of branches owned by the company in California----------	----------
8. Total length of branches owned by the company in other States----------	----------
9. Length of double track on branches----------	----------
10. Total length of road belonging to this company----------	----------
11. Aggregate length of siding and other tracks not enumerated above----------	----------
12. Same in California----------	----------
13. Aggregate length of track belonging to this company computed as single track ----------	----------
14. Same in California----------	----------
15. Total lengths of steel rail in tracks belonging to this company, not including steel top rail; (weight per yard----------)	----------
16. Number of spans of bridges of twenty-five feet and upwards, in California ----------	----------
Number of spans of bridges of twenty-five feet and upwards, outside State ----------	----------
17. Number of iron bridges (aggregate length,------feet,) in California----------	----------
Number of iron bridges (aggregate length,------feet,) outside State----------	----------
18. Number of wooden bridges (aggregate length,------feet,) in California----------	----------
Number of wooden bridges (aggregate length,------feet,) outside State----------	----------

[Page 25.]

----------Rail------Company.

DESCRIPTION OF ROAD—Continued.

Bridges built within the year in California.

Location.	Kind.	Material.	Length.	When Built.
----------	----------	----------	----------	----------
----------	----------	----------	----------	----------

Miles of embankment replaced by bridges or trestle-work, during year, in California ----------	----------
Miles of embankment replaced by bridges or trestle-work, during year, outside State ----------	----------
19. Number of crossings of highways at grade, in California----------	----------
Number of crossings of highways at grade, outside State----------	----------
20. Number of crossings of highways over railroad, in California----------	----------
Number of crossings of highways over railroads, outside State----------	----------
21. Number of crossings of highways under railroad, in California----------	----------
Number of crossings of highways under railroad, outside State----------	----------
22. Number of highway bridges eighteen feet above track, in California----------	----------
Number of highway bridges eighteen feet above track, outside State----------	----------
23. Number of highway bridges less than eighteen feet above track, in California ----------	----------
Number of highway bridges less than eighteen feet above track outside State ----------	----------
24. Number of highway crossings at which gates or flagmen are maintained, in California ----------	----------
Number of highway crossings at which gates or flagmen are maintained, outside State----------	----------
25. Number of highway crossings at which electric signals are maintained, in California ----------	----------
Number of highway crossings at which electric signals are maintained, outside State----------	----------
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California----------	----------
Number of highway crossings at which there are neither electric signals, gates, nor flagmen, outside State----------	----------

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[Page 26.]

----------Rail------Company.

DESCRIPTION OF ROAD—Continued.

27. Number of railroad crossings at grade ----------	----------
28. Number of railroad crossings over other roads, specifying same----------	----------
29. Number of railroad crossings under other railroads, specifying each----------	----------

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[Page 27.]

_____ *Rail* _____ *Company.*

ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY UNDER LEASE OF CONTRACT.

30. *Names, description, and length of each.*

Name of Company.	Termini.		Length (Miles.)	Dates of Lease.		Amount of Rental.
	From—	To—		From—	To—	

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_____ *Rail* _____ *Company.*

ROADS BELONGING TO OTHER COMPANIES, ETC.—Continued.

31. Total length of above roads	
32. Total length of above roads in California	
33. Total length of above roads in other States, specifying each	
34. Total miles of road operated by this company	
35. Total miles of road operated by this company in California	
36. Number of stations on all roads operated by this company	
37. Number of stations on all roads owned by this company	
38. Same in California	
39. Miles of telegraph on line of road operated by this company	
40. Miles of telegraph owned by this company	
41. Number of telegraph offices in company stations	
42. Number of telegraph stations operated by this company	
43. Number of telegraph stations operated jointly by railroad and telegraph companies	

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_____ *Rail* _____ *Company.*

ROLLING STOCK.

	Number.	Average Weight.	Market Value.
1. Locomotives			$
Average weight of engines in working order			
Maximum weight of engines in working order [ ]			
2. Tenders			
Average weight of tenders full of fuel and water			
Maximum weight of tenders full of fuel and water [ ]			
Average joint weight of engines and tenders			
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [feet]			
4. Total length of heaviest engine and tender over all [feet]			
5. Snow plows			
6. Passenger cars			
Average weight			
Maximum weight [ ]			
7. Mail and baggage cars			
8. Eight-wheel box freight cars			
9. Four-wheel box freight cars			
10. Eight-wheel platform cars			
11. Four-wheel platform cars			
12. Other cars			
Coal and gravel			
13. Total market value			$

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	
15. Number of locomotives equipped with train brakes	
(Kind of brake)	
16. Number of cars equipped with train brakes	
(Kind of brake)	
17. Number of passenger cars with Miller platform and buffer	

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[Page 30.]

_____ *Rail*_____ *Company.*

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	
2. Rate of speed of express passenger trains, including stops	
3. Rate of speed of accommodation trains, including stops	
4. Miles run by freight trains	
5. Rate of speed of express freight trains, including stops	
6. Rate of speed of accommodation freight trains, including stops	
7. Miles run by other trains, and for what purpose	
8. Total train miles run	
9. Total number of passengers carried	
Number of through passengers going east (or north)	
Number of through passengers going west (or south)	
Number of local passengers going east (or north)	
Number of local passengers going west (or south)	
10. Total passenger mileage, or passengers carried one mile	
11. Passenger mileage to and from other roads	
Average number of miles traveled by each local passenger	
Average number of miles traveled by each through passenger	
Average number of miles traveled by each passenger, through and local	
12. Number of tons freight carried (not including gravel)	
Number of tons freight from other States, carried	
Number of tons freight in this State, carried	
Number of tons freight produced in this State, carried	
Number of tons of each class of freight, produced in this State, carried	

[Page 31.]

_____ *Rail*_____ *Company.*

MILEAGE, TRAFFIC, ETC.—Continued.

13. Total freight mileage, or tons carried one mile	
14. Freight mileage to and from other roads	
15. Highest rate of fare per mile for any distance (excluding one mile)	
16. Lowest rate of fare per mile for any distance (single fare)	
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	
18. Average rate of fare per mile received from passengers to and from other roads	
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	
20. Average rate of fare per mile to all passengers	
21. Highest rate of freight per ton per mile for any distance	
22. Lowest rate of freight per ton per mile for any distance	
23. Average rate of local freight per ton per mile on roads operated by this company	
24. Average rate of freight per ton per mile to and from other roads	
25. Average rate of freight per ton per mile for all	
Average rate of freight per ton per mile, products of this State	
Average rate of freight per ton per mile, products of other States	
26. Average number of cars in passenger trains (including baggage cars)	
27. Average number of cars in freight trains—basis of eight-wheel	

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_____ *Rail*_____ *Company.*

MILEAGE, TRAFFIC, ETC.—Concluded.

28. Average weight of passenger trains, including locomotives and tenders, in working order (exclusive of passengers)	
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	
30. Number of persons regularly employed by company, including officers	
Average monthly pay of employés, other than officers	
Average monthly pay of engine drivers	
Average monthly pay of passenger conductors	
Average monthly pay of freight conductors	
Average monthly pay of baggage masters	
Average monthly pay of brakemen, flagmen, and switchmen	
Average monthly pay of section men	
Average monthly pay of mechanics in shops	
Average monthly pay of laborers	

RELATING TO PASSENGERS.

1. Total season ticket passengers (round trip)	
2. Passengers to San Francisco (including season)	
3. Passengers from San Francisco (including season)	
4. Season ticket passengers to and from San Francisco (one round trip daily)	

LIST OF ACCIDENTS IN CALIFORNIA.

	From causes beyond their own control—in California.		From their own misconduct or carelessness—in California.		Total—in California.		Total on whole road operated.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers								
Employés								
Others								
Totals								

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_____ *Rail*_____ *Company.*

STATEMENT OF EACH ACCIDENT IN CALIFORNIA.

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[Page 34.]

_____ Rail _____ Company.

STATEMENT OF EACH ACCIDENT IN CALIFORNIA—Continued.

| | | |

[Page 39.]

_____ Rail _____ Company.

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS,

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track December 31, 1881.			
			Single.		Double.	
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron..	Steel.
Main line without State	State line					
Main line within State						
Total on whole road, December 31, 1881						
Total constructed during year						
Total within the State constructed during year						
Total without the State constructed during year						

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1881.								
	Within State.			Without State.			Total.		
	Length in Miles	Average weight per Mile	Total weight, (Tons)	Length in Miles	Average weight per Mile	Total weight, (Tons)	Length in Miles	Average weight per Mile	Total weight, (Tons)
Length of iron rail									
Length of steel rail									
Total length of iron rail laid during the year									
Total length of steel rail laid during the year									
Total length of iron rail replaced by steel rail during the year									
Of the iron rail, the length of rerolled iron was									

[Page 39—Continued.]

_____ Rail _____ Company.

(SINGLE AND DOUBLE) OWNED BY THE COMPANY.

Length of Roadway—Single and Double Track.			Length of Track December 31, 1881. Reduced to Single Track.						
			Track.		Sidings.		Track and Sidings.		
Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Steel.	Iron.	Steel.	Iron and Steel.
							(b)	(c)	

December 31, 1881.								
Within State.			Without State.			Total.		
Length in Miles	Average weight per Mile	Total weight, (Tons)	Length in Miles	Average weight per Mile	Total weight, (Tons)	Length in Miles	Average weight per Mile	Total weight

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_____ *Rail* _____ *Company.*

TABLE D. GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

Bonds.			Interest Payable.			Total amount of Bonds or Cash	Disposed of.			Interest Accrued to Company.		Amount held by Company as an investment	Remarks
Character of	Date	Dues	By whom	When	Rate		Amount of Bonds	Cash realized	Discount	Dec. 31, 1881	During year		

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_____ *Rail* _____ *Company.*

TABLE E. OTHER AIDS OR GRANTS, FROM THE UNITED STATES, STATES, COUNTIES, CORPORATIONS, OR INDIVIDUALS.

Lands Granted by the United States Government.

To what Railroad Company.	Acres per Mile.	Number of Miles.	Number of Acres.			Estimated Value.	
			Total.	Less Reserved by Government.	Net Total.	Per Acre.	Total.
						$	$
						$	$

Lands or property, including right of way donated by States, counties, towns, corporations, or individuals, stating in detail the amount of land granted for right of way, for stations, for shops, for storehouses, etc.

By whom donated.	Description of Property.	Estimated Value.	Proceeds, if Sold.
		$	$
		$	$

Bonds whereof principal is payable by Company—Interest by State or other parties.

Character of—	Date When—		Amount.	Interest.		
	Issued.	Due.		Rate.	Accrued.	By Whom Payable.
			$		$	

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_____ *Rail* _____ *Company.*

TABLE F. SALES OF LANDS GRANTED BY UNITED STATES GOVERNMENT.

Total sales and accrued interest, in currency and coin.

		Acres Sold.	Average Price.	Amount.		
				Principal.	Interest Accrued.	Total.
Lands	Prior to Dec. 31, 1881.		$	$	$	$
Timber and stumpage						
Total to December 31, 1881			$	$	$	$
During the year			$	$	$	$

Amounts paid and due on sales above stated—currency and coin.

	Amount Due.			Amount Paid.		
	Principal.	Accrued Interest.	Total.	Principal.	Interest.	Total.
To December 31, 1881	$	$	$	$	$	$
During year	$	$	$	$	$	$

Net cash receipts in coin, deducting discount on currency and expenses.

	Received in Currency.	Discount on Same.	Coin.			
			Currency Reduced to Coin.	Coin.	Less Expenses.	Net Coin Receipts.
To December 31, 1881	$	$	$	$	$	[a] $
During year	$	$	$	$	$	$

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Application of amount placed in hands of Trustees of redemption of bonds (to be stated in coin.)

	Bonds Redeemed.			Total Received by Trustees	Balance on Hand	Discount or Premium on Bonds Redeemed
	Number.	Amount.	Cost.			
To December 31, 1881		$	$	$	$	$
During year						
				b		
Total						
				c		
Cash from sales not placed in hands of Trustees						
Total net receipts as above stated (a)=(b+c)				$		

Patents received to December 31, 1881—number of acres [ ]
Number of purchasers to December 31, 1881 [ ]
Average number of acres sold each [ ]

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STATE OF CALIFORNIA, }
County of ____ } ss.

____, President of the ____ Company, and ____ of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing ____ sheets, ____, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 188__.

Subscribed and sworn to before me, this ____ day of ____, 188__.

REPORTS

OF

Railroad Companies for the Year 1880.

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REPORTS OF RAILROAD COMPANIES

TO THE BOARD OF RAILROAD COMMISSIONERS, FOR YEARS ENDING DECEMBER 31, 1880, AND 1881.

NOTE.—In the Reports of the several companies herein contained, all inquiries in the blank form of Report which were left unanswered by the companies respectively have been omitted, both for economy of space and greater clearness.

AMADOR BRANCH RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS.

Leland Stanford, President	San Francisco.
C. P. Huntington, Vice President	New York.
Geo. Crocker, Treasurer	San Francisco.
Chas. Crocker	San Francisco.
W. V. Huntington	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The Amador Branch Railroad Company was incorporated July 3, 1875.

CAPITAL STOCK.

1. Capital stock authorized by charter		$675,000 00
2. Capital stock authorized by votes of company		675,000 00
3. Capital stock issued [number of shares, 6,750]; amount paid in		675,000 00
5. Total amount paid in as per books of the company		675,000 00
8. Par value of shares issued		100 00
9. Total number of stockholders	11	
10. Number of stockholders in California	10	
11. Amount of stock held in California		648,400 00

DEBT.

12. Funded debt as follows:		
Bonds		$675,000 00
Interest paid on same during year	$40,500	
13. Total amount of funded debt		$675,000 00
14. Unfunded debt:		
All other debts, current credit balances, etc.		20,250 00
15. Total amount of unfunded debt		$20,250 00
16. Total gross debt liabilities		$695,250 00
Sinking funds		17,881 42
18. Total net debt liabilities		$677,368 58

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROADS AND BRANCHES.

Construction.

11. Total cost of construction, not segregated	$1,355,261 53
27. Whole amount of permanent investments	1,355,261 53
30. Cash and cash assets	17,881 42
31. Total property and assets of the company	1,373,142 95

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EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry		$4,976 58
5. Passenger and freight stations		2,577 99
Woodsheds and water stations		332 68
20. Net addition to property account for the year		7,887 25

REVENUE FOR THE YEAR.*

13. Derived from rents for use of road and equipment when leased		$40,750 00
19. Total income derived from all sources		40,750 00

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR—CLASS I—GENERAL TRAFFIC EXPENSES.†

2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV		$15 80
13. Total expenses		15 80

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$40,734 20
2. Percentage of same to capital stock and net debt	.03	
3. Percentage of same to total property and assets	.02.9	
4. Interest accrued during the year:		
On funded debt	$40,500	
On other debt		
		40,500 00
7. Balance for the year, or surplus		234 20
8. Surplus at commencement of the year	$2,658 75	
9. Surplus at commencement of the year, as changed by aforesaid entries		2,658 75
10. Total surplus, December 31, 1881		2,658 75

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.‡

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$1,355,261 53
Cash, cash assets, and other items	17,881 42
Total	$1,373,142 95

Credits.

Capital stock	$675,000 00
Funded debt	675,000 00
Other debts (specifying same): current accounts	20,250 00
Profit and loss (profit, if any)	2,892 95
Total	$1,373,142 95

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Rental		$40,750 00
Interest	$40,500 00	
Expenses	15 80	
Profit	234 20	
	$40,750 00	

*Included in report of Central Pacific Railroad Company, Lessees.
†Included in Lessee's Report.
‡Included in report of Central Pacific R. R. Co., Lessees.

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use: From Galt to Ione	December 4, 187
2. Length of main line of road from Galt to Ione	27.200
10. Total length of road belonging to this company	27.200
11. Aggregate length of siding and other tracks not enumerated above	3.048
13. Aggregate length of track belonging to this company computed as single track	30.248
16. Number of spans of bridges of twenty-five feet and upwards, in California	
18. Number of wooden bridges (aggregate length, 2,057 feet,) in California	4

BRIDGES BUILT WITHIN THE YEAR IN CALIFORNIA.

Location.	Kind.	Material.	Length.	When Built.
Dry Creek	Straining Beam	Wood	199 feet.	Octobe
Dry Creek	Piling	Wood	96 feet.	Octobe
Sutter Creek	Piling	Wood	96 feet.	Octobe

26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California		1
37. Number of stations on all roads owned by this company		
40. Miles of telegraph owned by this company		2
41. Number of telegraph offices in company stations		

12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of	Date	Due	In what Money Payable.		Interest.		Authorized Amount.
			Interest.	Principal.	Rate.	Payable.	
1st Mortgage.	Jan. 1, 1877.	Jan. 1, 1907.	Gold.	Gold.	6	Jan. & July.	$675,000

TABLE A—Continued.

Total issued to December 31, 1881.	Accrued interest during year.	Amount of Bonds outstanding December 31, 1881.
$675,000	$40,500	$675,000

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TABLE C.

Length in Miles of Road and Tracks (single and double) owned by the Company.

Main Line and Branches.	From—	To—	Length of Track and Sidings December 31, 1880.		
			Track—All Single.	Sidings.	Track and Sidings.
			All Iron.	All Iron.	All Iron.
Main line within State	Galt	Ione	27.2000	3.0483	30.2483
Total on whole road, December 31, 1880			27.2000	0.1250	0.1250

	December 31, 1880—All within State.			December 31, 1881—All within State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rail	60.4966	44.	2,661.8504	0.2500	44	11

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Leland Stanford, President of the Amador Railroad Company, and ----------, of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of the said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

LELAND STANFORD,
JAS. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth day of February, 1881.

CHAS. J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

BERKELEY BRANCH RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
C. P. Huntington, Vice President	New York.
Geo. Crocker, Treasurer	San Francisco.
Chas. Crocker	San Francisco.
Chas. F. Crocker	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ---------- California.

The Berkeley Branch Railroad Company was incorporated September 25, 1876.

CAPITAL STOCK.

1. Capital stock authorized by charter	$100,000 00
2. Capital stock authorized by votes of company	100,000 00
3. Capital stock issued [number of shares, 1,000]; amount paid in	100,000 00
5. Total amount paid in as per books of the company	100,000 00
8. Par value of shares issued	100 00
9. Total number of stockholders ---------- 9	
10. Number of stockholders in California ---------- 8	
11. Amount of stock held in California	77,800 00

DEBT.

12. Funded debt, as follows:	
Bonds	$100,000 00
Interest paid on same during year ---------- $6,000	
13. Total amount of funded debt	$100,000 00
14. Unfunded debt:	
All other debts, current credit balances, etc.	$7,994 16
15. Total amount of unfunded debt	$7,994 16
16. Total gross debt liabilities	$107,994 16
18. Total net debt liabilities	$107,994 16

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

11. Total cost of construction not segregated	$207,375 00
27. Whole amount of permanent investments	$207,375 00
31. Total property and assets of the company	207,375 00

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

8. Engineering, agencies, salaries, and other expenses during construction	$7,129 92

REVENUE FOR THE YEAR.

13. Derived from rents for use of road and equipment when leased	$6,536 00

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	$1,517 51

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NET INCOME, DIVIDENDS, ETC.

1. Total net income		$5,018 49
2. Percentage of same to capital stock and net debt	.02.4	
3. Percentage of same to total property and assets	.02.4	
4. Interest accrued during the year:		
On funded debt	$6,000 00	
Total		6,000 00
7. Balance for the year (deficit)		981 51
8. Surplus at commencement of the year	$362 35	
Deduct or add entries made in profit and loss account during the year, not included in the foregoing statement		
9. Surplus at commencement of the year, as changed by aforesaid entries		362 35
10. Total (deficit), December 31, 1881		619 16

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$207,375 00
Profit and loss (loss, if any)	619 16
Total	$207,994 16

Credits.

Capital stock	$100,000 00
Funded debt	100,000 00
Other debts: current accounts	7,994 16
Total	$207,994 16

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.		Credits.	
Rent	$6,000	00	$6,536	00
Interest	1,517	00		
Expenses				
Balance Loss			981	51
Totals	$7,517	51	$7,517	51

DESCRIPTION OF ROAD.

	Date of Opening.
1. Date when the road or portions thereof were opened for public use:	
From Shell Mound to Berkeley	August 16th, 1876.
From Berkeley to Berryman's	July 1st, 1878.

2. Length of main line of road from Shell Mound to Berryman's	3.8363
Length of main line in California	Same.
5. Branches owned by the company	None.
10. Total length of road belonging to this company	3.8363
11. Aggregate length of siding and other tracks not enumerated above	0.4978
12. Same in California	Same.
13. Aggregate length of track belonging to this company computed as single track	4.3341
14. Same in California	Same.
15. Total lengths of steel rail in tracks belonging to this company, not including steel top rail; (weight, per yard, fifty pounds)	4.4614

18. Number of wooden bridges (aggregate length, forty-seven feet), in California	1
Bridges built within the year	None.
19. Number of crossings of highways at grade, in California	11
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	11

ROADS BELONGING TO OTHER COMPANIES, ETC.

37. Number of stations on all roads owned by this company	2
40. Miles of telegraph owned by this company	None.
41. Number of telegraph offices in company stations	None.

12. TABLE A. FUNDED DEBT.

To include all bonds payable by the Company, except United States Government Bonds.

Character of	Date	Due	In What Money Payable.		Interest.		Authorized Amount
			Interest	Principal	Rate	Payable	
1st Mortgage.	Jan 1, 1877.	Jan. 1, 1907.	Gold.	Gold.	6	Jan. & July.	$100,000.

TABLE A—Continued.

Total Issued.	Accrued Interest.	Amount of Bonds Outstanding Dec. 31, 1881
Dec. 31, 1881	During Year.	
$100,000.	$6,000.	$100,000.

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TABLE C—LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE), OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			LENGTH OF TRACK, DECEMBER 31, 1881.											
			Single.		Reduced to Single Track.									
					Length of Roadway—Single and Double Track.			Track and Sidings.						
								Track.		Sidings.		Track and Sidings.		
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Steel.	(b) Iron.	(c) Steel.	Iron and Steel.
Main line within State	Shell Mound	Berryman's	0.8599	2.9744	0.8599	2.9764	3.8363	0.8599	2.9764	0.2435	0.2543	1.1034	3.2307	4.3341
Total on whole road, December 31, 1881			0.8599	2.9744										
Total constructed during year—None.														

The length of rail is double the length of single track, columns (b) and (c) above.

	December 31, 1881.		
	Within the State.		
	Length in Miles.	Average weight per Mile.	Total weight (Tons.)
Length of iron rails	2.2068	44.	97.0992
Length of steel rails	6.4614	39.2857	253.8406

STATE OF CALIFORNIA, City and County of San Francisco, } ss.

Leland Stanford, President of the Berkeley Branch Company, and James O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages have been complied and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

LELAND STANFORD,
JAS. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth (15)[day of February, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

CALIFORNIA NORTHERN RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

William Corcoran, President ..... San Francisco.
William Lambert, Superintendent ..... Office, 6 Odd Fellows Hall, Marysville.

BUSINESS ADDRESS OF THE COMPANY:

California Northern Railroad Company ..... Marysville.

The California Northern Railroad Company was incorporated June 29, 1860.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$1,000,000
3.	Capital stock issued [number of shares 10,000]; amount paid in	964,000
6.	Amount of capital stock issued but not full paid	36,000
9.	Total number of stockholders	29
10.	Number of stockholders in California	29
11.	Amount of stock held in California (all)	964,000

DEBT.

12.	Funded debt as follows:	
	Bonds	850,000
	Interest paid on same during year	None.
13.	Total amount of funded debt, exclusive of interest	850,000

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Equipment.

12.	Locomotives	2
16.	Passenger cars	2
	Mail cars }	1
	Baggage cars }	
17.	Freight cars and platform cars	13
	Other cars—hand cars	2

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

Assessed value of all property owned by company, including roadbed, rolling stock, franchise, right of way, depots, and grounds, to December 31, 1880:

	In Yuba County	$90,450 90
	In Butte County	109,294 00
	Total	$199,744 90
27.	Whole amount of permanent investments	199,744 90
28.	Property in California	
29.	Amount of supplies and materials on hand	
30.	Cash and cash assets	
31.	Total property and assets of the company, as per assessment rolls	

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REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company		$16,714 25
2. Derived from passengers from other roads, over road operated by this company		1,850 00
5. Derived from express and extra baggage, included in passenger account		1,699 80
6. Derived from mails		1,131 50
7. Total earnings from passenger department		$21,395 55
8. Derived from local freight on roads operated by this company		$17,571 83
12. Total earnings from freight department		$17,571 83
14. Total transportation earnings		$38,967 38
15. Earnings per mile of road operated		$1,470 84
16. Earnings per train mile (total passenger and freight)		1 92
18. Old iron, etc.		16 20
19. Total income derived from all sources		$38,983 58

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes State, and local		$3,167 57
2. General salaries		4,200 00
Legal expenses		225 00
Advertising, stationery, and printing		650 36
Office and miscellaneous expenses		1,097 80
3. Insurance premiums and losses by fire, and damages for fires set by engines		175 00
5. Total		$9,515 73
6. Proportion belonging to passenger department		$5,123 85
7. Proportion belonging to freight department		4,391 88

Class II—Maintenance of Ways and Buildings, and Movement Expenses.

1. Repairs of road (inclusive of bridges and new ties)		$4,840 64
14. Fuel for engines and cars:		
Number of cords of wood, 434; cost		2,085 04
17. Oil and waste		95 05
18. Switchmen, watchmen, flag and signalmen, not segregated from Class III, No. 4		
19. Total		$7,020 76
20. Proportion of same to passenger department		$3,780 40
21. Proportion of same to freight department		3,240 36

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars, freight cars and locomotives*		$2,896 30
4. Salaries, wages, and incidentals of passenger trains*		
Salaries, wages, and incidentals of ferries		5,140 17
8. Total		

* All trains are mixed; for this reason cannot segregate.

Class IV—Freight traffic expenses.

1. Repairs of freight cars, not segregated from Class III, No. 1		
3. Damages and gratuities, freight		29 25
4. Salaries, wages, and incidentals of freight trains, not segregated from Class III, No. 4		
5. Salaries, wages, and incidentals of freight stations		5,221 85
8. Total		$5,250 10
9. Total expenses of operating the road, embraced in Classes I, II, III, and IV		$29,823 56

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$9,160 02

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from passenger department, as per "Revenue for the Year"		$21,395 55
2. Per passenger train mile		1 07
3. Expenses, proportion of "General Traffic Expenses"		5,123 95
4. Expenses, proportion of "Maintenance of Ways and Buildings, and Movement Expenses"		3,780 40
5. Expenses, "Passenger Traffic"		8,036 97
6. Total expenses		16,941 22
7. Per passenger train mile		82
8. Net earnings		4,454 83
9. Per passenger train mile		25

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year," No. 12		$17,571 83
2. Per freight train mile		85
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7		4,391 88
4. Expenses, proportion of "Maintenance of Ways and Buildings, and Movement Expenses," as Per Class II, No. 21		3,240 36
5. Expenses, "Freight Traffic," as per Class IV, No. 8		5,250 10
6. Total expenses		12,882 34
7. Per freight train mile		63
8. Net earnings		4,689 49
9. Per freight train mile		22

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31ST, 1881.

		September 30, 1880.
Debits.		
Assessed value of all property owned by this company, including road bed, rolling stock, franchise, right of way, depots, and grounds, etc.:		
In Yuba County	$90,450 90	
In Butte County	109,294 00	
Total as per assessment rolls		$199,744 90
Profit and loss		
Total		$199,744 90
Credits.		
Capital stock		$1,000,000 00
Funded debt (nominal*) exclusive of interest		850,000 00
Other debts		
Profit and loss		
Total		$1,850,000 00

* To be determined by process of law.

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DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:
   From Oroville to Marysville 1864
2. Length of main line of road from Oroville to Marysville, ... 26.5 miles.
   Length of main line in California, ... 26.5 miles.
10. Total length of road belonging to this company, ... 26.5 miles.
11. Aggregate length of siding and other tracks not enumerated above, ... 0.5 miles.
12. Same in California, ... 0.5 miles.
13. Aggregate length of track belonging to this company computed as single track, ... 27 miles.
14. Same in California, ... 27 miles.
18. Number of wooden bridges (aggregate length, 125 feet) in California, ... 1.
    Number of wooden trestles (aggregate length, 980 feet) in California, ... 31.

Bridges built within the year in California.

Location.	Kind.	Material.	Length.	When built.
Honcut Creek	Arch	Wood	125 feet	Rebuilt 1876.

19. Number of crossings of highways at grade, in California, ... 4.
28. Number of railroad crossings over other roads:
    Central Pacific Railroad (Oregon Division) at Marysville, ... 1.
37. Number of stations owned by this company, ... 3.

ROLLING STOCK.

	Number.	Average Weight.	Market Value.
1. Locomotives	2	About 16 tons.	$2,500
Average weight of engines in working order*			
2. Tenders	2		200
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender—[31 feet]*			
4. Total length of heaviest engine and tender over all—[40½ feet]*			
6. Passenger cars	2		1,400
7. Mail and baggage cars	1		300
8. Eight-wheel box freight cars	7		3,350
10. Eight-wheel platform cars	6		3,350
12. Other cars; hand cars	2		100
Coal and gravel (none especially for this purpose)			
13. Total market value			$11,350

*Have no means of weighing.

14. Total number of freight cars, including coal, etc., on a basis of eight wheels 13
15. Number of locomotives equipped with train brakes ..... None.
    Kind of brake ..... Common.
16. Number of cars equipped with train brakes ..... None.
    Kind of brake ..... Common.
17. Number of passenger cars with Miller platform and buffer ..... None.

MILEAGE, TRAFFIC, ETC.

8. Total train miles run 20,500
9. Total number of passengers carried 10,998
10. Total passenger mileage, or passengers carried one mile 274,616
11. Passenger mileage to and from other roads .....

15. Highest rate of fare per mile for any distance (excluding one mile) ..... 7½ cents.
16. Lowest rate of fare per mile for any distance (single fare) ..... 7½ cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company ..... 7½ cents.
    Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets ..... 7½ cents.
18. Average rate of fare per mile received from passengers to and from other roads ..... 7½ cents.
20. Average rate of fare per mile for all passengers ..... 13 cents.
22. Lowest rate of freight per ton per mile for any distance ..... 4 cents.
23. Average rate of local freight per ton per mile on roads operated by this company ..... 5.86 cents.
30. Number of persons regularly employed by company, including officers 21
    Average monthly pay of employés, other than officers $100
    Average monthly pay of brakemen, flagmen, and switchmen 60
    Average monthly pay of section men 50
    Average monthly pay of mechanics in shops 90
    Average monthly pay of laborers 50

FUNDED DEBT.

Character of.	Series.	Date.	Due.	In what Money Payable.		Interest.		Authorized Amount.
				Interest.	Principal.	Rate.	Payable.	
First mortgage*	1	1861	1881	Gold	Gold	10	Semi-annually	$850,000

* Number of bonds legally issued to be determined by law.

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track December 31, 1880.			
			Single.		Double.	
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.
Main line within State	Oroville	Marysville	26.5		.05	

The length of rail is double the length of single track, columns (*b*) and (*c*) above.	December 31, 1880.		
	Within State.		
	Length in Miles.	Average weight per Mile.	Total weight (Tons).
Length of iron rail	54	79.1	2,435.7
Length of steel rail			

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TABLE D. GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

Remarks			The County of Butte exchange 200 County Bonds (of like denomination and rate of interest) for 200 Bonds of this Company.
Amount held by Company as an Investment.			None.
Interest Accrued to Company.		During Year	See under remarks.
		Dec. 31, 1881	
Disposed of.		Discount	No means of knowing.
		Cash Realized	
		Amount of Bonds	$200,000
Total Amount of Bonds or Cash			$200,000
Interest Payable.		Rate	10
		When	Semi-annually.
		By Whom	County of Butte.
Bonds.		Due	1881.
		Date	1861 to 1864.
		Character of	County Bonds.

RECEIVER'S OFFICE OF THE CALIFORNIA NORTHERN RAILROAD COMPANY,
609 SACRAMENTO STREET, SAN FRANCISCO, January 15, 1881.

To the Board of Railroad Commissioners:

GENTLEMEN: The foregoing report has been compiled and prepared under my supervision. As far as it refers to the earnings and operating expenses of this road, it is in all respects a true and correct exhibit for the year commencing October 1, 1879, and ending September 30, 1880.

The California Northern Railroad has been under the direction of the Court since August, 1877. The previous management, from some cause or other, have not transmitted to this office the necessary information to enable me to fully answer some of the questions herein contained, which must be offered as an excuse for omissions of such answers.

Very respectfully yours,

WM. CORCORAN,
Receiver California Northern Railroad.

CALIFORNIA PACIFIC RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Richard P. Hammond, President	San Francisco.
G. W. Crocker, Vice-President	San Francisco.
J. L. Willcutt, Treasurer	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.
Charles F. Crocker	San Francisco.
W. V. Huntington	San Francisco.
N. T. Smith	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The California Pacific Railroad Company was incorporated December 23, 1869, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below.

Names of Railroad Companies.	Dates of Incorporation.	Names of Railroad Companies.	Dates of Incorporation.
California Pacific Railroad	January 6, 1865	San Francisco and Marysville Railroad	October 26, 1857
		Sacramento and San Francisco Railroad	December 2, 1864
California Pacific Railroad Extension Company	April 5, 1869	Purchase of Vaca Valley Railroad Company	March 2, 1864

CAPITAL STOCK.

1. Capital stock authorized by charter		$12,000,000 00
2. Capital stock authorized by votes of company		12,000,000 00
3. Capital stock issued [number of shares 120,000]; amount paid in		12,000,000 00
4. Capital stock paid in on shares not issued [number of shares]		
5. Total amount paid in as per books of the company		12,000,000 00
8. Par value of shares issued		100 00
9. Total number of stockholders	132	
10. Number of stockholders in California	34	
11. Amount of stock held in California		7,440,500 00

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DEBT.

12. Funded debt as follows:		
Bonds		$6,851,000 00
Interest paid on same during year	$403,500	
13. Total amount of funded debt		$6,851,000 00
All other debts, current credit balances, etc.		$1,610,486 96
15. Total amount of unfunded debt		$1,610,486 96
16. Total gross debt liabilities		$8,461,486 96
Other securities and debt balances		$470,838 63
18. Total net liabilities		$7,990,648 33

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry 2. Bridging 3. Superstructure, including rails	$18,335,864 26
4. Land and right of way	45,823 78
Land damages	53,305 63
Fences	108,965 27
5. Passenger and freight stations 6. Engine houses, car sheds, and turn-tables	93,332 35
7. Machinery and tools	14,319 82
8. Furniture	6,232 32
9. Wharves	121,857 66
11. Total cost of construction	$18,779,669 09

Equipment.

	Number.	To December 31, 1881. Cost.
12. Locomotives	12	$138,443 26
16. Passenger cars	16	256,570 62
Mail cars	6	
Baggage cars		
17. Freight cars	189	
Other cars	1	
18. Total for equipment		$395,013 88

23. Steamboat property:		
Steamer New World Steamer Moulton Steamer Vallejo Barge Napa	Net cost	$315,909 91

NOTE.—The steamers and barge have all been sold or were condemned and broken up, and cannot be included as a permanent investment.

27. Whole amount of permanent investments	$19,174,682 97
28. Property in California, all	
30. Cash and cash assets	470,838 63
31. Total property and assets of the company	$19,645,521 60

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading, masonry, and ballasting		$150 60
2. Bridging		2,911 33
4. Land, right of way		250 00
Fences		218 89
5. Passenger and freight stations		1,433 62
Woodsheds and water stations		1,661 34
6. Engine houses, car sheds, turn-tables, and section house		319 28
8. Sidings		2,997 76
		$9,942 82
19. Property sold and credited to property account during the year, specifying same:		
Old iron and material sold	$14,650 13	
Reduction of debt by exchange of bonds	3,677 87	
Total credit		$18,328 00
20. Net reduction in property account for the year		$8,385 18

REVENUE FOR THE YEAR.

1. Derived from passengers, freight, etc., on roads of this company	This revenue belongs to lessees—Central Pacific Railroad Co.—and are not segregated in their accounts.
13. Derived from rents for use of road and equipment when leased	$600,000 00
18. Income derived from all other sources (including accretions from sinking funds, investments in stocks, bonds, steamboat property, transportation lines, etc.):	
Interest on accounts current	4,105 22
19. Total income derived from all sources	$604,105 22

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I.—General traffic expenses.

2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
General expenses	$2,531 10
Repairs, washouts	1,303 93
	$3,835 03
5. Total	

NET INCOME, DIVIDENDS, ETC.

		$400,270 19
1. Total net income		
2. Percentage of same to capital stock and net debt,	.03	
3. Percentage of same to total property and assets,	.03	
4. Interest accrued during the year:		
On funded debt	$403,500 00	
On other debt	90,678 13	
Total		494,178 13
		106,092 06
7. Balance for the year, or surplus	$606,715 72	
8. Deficit at commencement of the year		
Add entries made in profit and loss account during the year, not included in the foregoing statement	7 14	
9. Deficit at commencement of the year, as changed by aforesaid entries		606,722 86
10. Total deficit, December 31, 1881		500,630 80

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GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$19,095,579 00
Cost of equipment	395,013 88
Cash, cash assets, and other items:	
Balance of accounts	470,838 63
Profit and loss	500,630 80
Total	$20,462,062 31

Credits.

Capital stock	$12,000,000 00
Funded debt	6,851,000 00
Other debts:	
Bills payable and interest	1,398,000 38
Unpaid coupons	211,587 50
Balance of account	875 43
Total	$20,462,062 31

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Rental		$600,000 00
Interest	$494,178 13	4,105 22
General expenses	2,531 10	
Repairs of washouts	1,303 93	
Balance of profit	106,092 06	
Totals	$604,105 22	$604,105 22

DESCRIPTION OF ROAD.

	Date of Opening.
1. Date when the road or portions thereof were opened for public use:	
From Vallejo to Sacramento	Turned over to company completed by contractor in January, 1870.
From Napa Junction to Calistoga	
From Davisville to Marysville	

During the building of the road in years 1868 and 1869 the contractors were the managers, and no records were kept by the company of any of the details of the progress of the work, nor when the stations were opened for business.

DESCRIPTION OF ROAD.

2. Length of main line of road from Vallejo to Sacramento	60.3900
5. Branches owned by the company	Two.
Napa Branch, Adelanta to Calistoga (single track)	34.4800
Marysville Branch, Davis to Knight's Landing (single track)	18.6400
6. Total length of branches owned by the company	53.1200
7. Total length of branches owned by the company in California	Same.
10. Total length of road belonging to this company	113.5100
11. Aggregate length of siding and other tracks not enumerated above	22.4733
13. Aggregate length of track belonging to this company computed as single track	135.9833
15. Total lengths of steel rail in tracks belonging to this company, not including steel top rail; (weight, per yard, fifty or sixty pounds):	
Steel rail fifty pounds per yard (rail)	85.9838
Steel rail sixty pounds per yard (rail)	4.9886
16. Number of spans of bridges of twenty-five feet and upwards, in California	23
18. Number of wooden bridges (aggregate length, 17.294 feet), in California	207

DESCRIPTION OF ROAD.

Bridges built within the year.

Location.	Kind.	Material.	Length.	When Built.
Cache Creek	Straining beam	Wood	160	November.

19. Number of crossings of highways at grade, in California	98
20. Number of crossings of highways over railroad, in California	1
23. Number of highway bridges less than eighteen feet above track, in California	1
24. Number of highway crossings at which gates or flagmen are maintained, in California	1
29. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	97
27. Number of railroad crossings at grade	1

ROADS BELONGING TO OTHER COMPANIES.

37. Number of stations on all roads owned by this company	33
41. Number of telegraph offices in company stations	14

ROLLING STOCK.

	Number.	Average Weight.	Cost—Market Value.
1. Locomotives	12		
Average weight of engines in working order		59,367	
Maximum weight of engines in working order, 61,200			
2. Tenders	12		$138,443 26
Average weight of tenders full of fuel and water		32,750	
Maximum weight of tenders full of fuel and water, 41,000			
Average joint weight of engines and tenders		92,117	
3. Length of heaviest engine and tender from center of forward truck wheel of engine to center of rear wheel of tender, 41 11/12 feet.			
4. Total length of heaviest engine and tender over all, 51 feet.			
6. Passenger cars	16		
Average weight		39,275	
Maximum weight, 45,000			
7. Mail and baggage cars	6	31,250	
8. Eight wheel box freight cars	37	17,300	256,570 62
9. Four-wheel box freight cars			
10. Eight-wheel platform cars	152	13,500	
11. Four-wheel platform cars			
12. Other cars, caboose	1	18,600	
Coal and gravel			
13. Total market value			$395,013 88

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	189
15. Number of locomotives equipped with train brakes (Westinhouse Air Brake	5
16. Number of cars equipped with train brakes (Westinhouse Air Brake)	22
17. Number of passenger cars with Miller platform and buffer	16

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TABLE A. FUNDED DEBT.

To include all bonds payable by the Company, except United States Government Bonds.

Character of—	Series	Date.	Due.	In what Money Payable.		Interest.		Authorized Amount.	Total Issued.	Accrued Interest.	Amount of Bonds Outstanding December 31, 1881.
				Interest.	Principal.	Rate.	Payable.		Dec. 31, 1881.	During Year.	
First Mortgage.		Jan. 1, '67	Jan. 1, '87	Gold.	Gold.	7	Jan & July	$2,250,000	$2,250,000	$157,500	$2,250,000
Cal. Pac. Ex. Co.*		May 1, '69	July 1, '89	Gold.	Gold.	7	Jan & July	3,500,000	3,500,000		8,000
Second Mortgage.		Aug. 9, '71	Jan. 1, '91	Gold.	Gold.	6	Jan & July	1,600,000	1,600,000	96,000	1,600,000
Third Mortgage.*	A	July 1, '75	July 1, '05	Gold.	Gold.	6	Jan & July	2,000,000	1,993,000	120,000	1,993,000
Third Mortgage.	B	July 1, '75	July 1, '05	Gold.	Gold.	3	Jan & July	1,000,000	1,000,000	30,000	1,000,000
										$403,500	$6,851,000

* Interest stopped on Extension Co. Bonds, January 1, 1874, and since then they have been in progress of exchange for Series "A," 3d Mortgage Bonds. Back coupons upon the latter are paid when exchange is made.

12. TABLE A. FUNDED DEBT—Continued.

Character of—	Series	Bonds sold during year ending December 31, 1881.		Character of	Series	Bonds redeemed during year ending December 31, 1881.		
		Amount of Bonds.	Amount Realized.			Amount.	Cost.	Discount, or Premium.
Third Mortgage Bonds	A	$5,000	$5,000	California Pacific Railroad Extension Company		$9,000	$5,142 83	$3,857 17
				The above bonds were put in at four sevenths of their face value, and exchanged for the Third Mortgage Bonds, series "A" shown on the other side.				
Third Mortgage Bonds	B	$4,000	$4,000	Income Bonds	C	£200	$1,000 00	
				Income Bonds	D	200	1,000 00	
These Bonds were issued in exchange for the Income Bonds redeemed on opposite folio.				Income Bonds	E	200	1,000 00	
				Income Bonds	F	200	1,000 00	

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE), OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.	Length of Track, December 31, 1881.													
	Single.				Reduced to Single Track.									
					Length of Roadway—Single and Double track.			Track.			Track and Sidings.			
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Iron.	Steel.	Iron and Steel.
Main line within State	Vallejo	Sacramento	14.9526	45.4374	14.9526	45.4374	60.39	14.9526	45.4374	15.6029	(b) 30.5555	(c) 45.4374	75.9929
Napa Branch	Adelanta	Calistoga	34.4312	0.0488	34.4312	0.0488	34.48	34.4312	0.0488	3.1477	37.5789	0.0488	37.6277
Marysville	Davis	Knight's Landg	18.6400		18.6400		18.64	18.6400		3.7227	22.3627		22.3627
Total on whole road, December 31, 1881			68.0238	45.4862	68.0238	45.4862	113.5100	68.0238	45.4862	22.4723	90.4971	45.4862	135.9833
Total constructed during year										0.5161	0.5161		0.5161

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1880—Within State.			December 31, 1881—Within State.			
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rail	180.9944	40.	7,239.7680	1.0322	40.	41.2880
Length of steel rails	90.9724	39.7166	3,613.1158	54.5791	39.2857	2,144.1817

Lands or property, including right of way donated by States, Counties, Towns, Corporation individuals, stating in detail the amount of land granted for right of way, for sta for shops, for storehouses, etc.

Lands for company's use have been deeded to them, from time to time, by persons thr whose lands the road of the company runs, for merely nominal prices.

None of their land is for sale.

Nearly all the right of way and station grounds were furnished to the company by con tors for construction under the terms of the contract.

The company has no lands for sale.

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Richard P. Hammond, President of the California Pacific Railroad Company, and James Gunn, Secretary of the said company, being duly sworn, depose and say, that the statem tables, and answers contained in the foregoing sheets, have been compiled and prepared by proper officers of said company, from its books and records, under their direction and su vision; that they, the deponents, have carefully examined the same, and that as now furni by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, plete, and true, to the best of their knowledge, and, as they verily believe, the same cont true and full exhibit of the condition and affairs of said company on the thirty-first da December, 1880.

RICHARD P. HAMMON
JAS. O'B. GUNN.

Subscribed and sworn to before me, this twenty-first day of February, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of Californ

CENTRAL PACIFIC RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

Leland Stanford, President ..... San Franc
C. P. Huntington, First Vice-President ..... New York, N
Charles Crocker, Second Vice-President ..... San Franc
E. W. Hopkins, Treasurer ..... San Franc
E. H. Miller, Jr., Secretary ..... San Franc

NAMES OF DIRECTORS:

Leland Stanford ..... San Franc
C. P. Huntington ..... New York, N
Charles Crocker ..... San Franc
Charles F. Crocker ..... San Franc
W. V. Huntington ..... San Franc
E. W. Hopkins ..... San Franc
E. H. Miller, Jr. ..... San Franc

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... Califo

The Central Pacific Railroad Company was incorporated August 22, 1870, and formed consolidation of the companies whose names and dates of incorporation are shown in the t below.

List of companies consolidated into Central Pacific Railroad Company, December 31, 1880

The Central Pacific Railroad of California, organized June 28, 1861.
The Central Pacific Railroad of California, amended October 8, 1864.
The San Francisco and Oakland Railroad Company, organized October 21, 1861.
The Yuba Railroad Company, organized November 17, 1862.
The Western Pacific Railroad Company, organized October 13, 1862.
The San Francisco and Alameda Railroad Company, organized March 25, 1863.
The San Francisco, Alameda, and Stockton Railroad Company, organized December 8,
The California and Oregon Railroad Company, organized June 30, 1865.
The San Francisco Bay Railroad Company, organized September 25, 1865.
The San Joaquin Valley Railroad Company, organized February 5, 1868.
The Marysville Railroad Company, organized November 25, 1867.

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Consolidations.

California and Oregon Railroad Company, and Marysville Railroad Company, July 16, 1868—name, "The California and Oregon Railroad Company."

California and Oregon Railroad Company, and Yuba Railroad Company, December 18, 1869—name, "The California and Oregon Railroad Company."

The San Francisco and Alameda Railroad Company, and The San Francisco, Alameda, and Stockton Railroad Company, October 15, 1868—name, "The San Francisco and Alameda Railroad Company."

The Western Pacific Railroad Company, and The San Francisco Bay Railroad Company, October 28, 1869—name, "The Western Pacific Railroad Company."

The Central Pacific Railroad Company of California, and the Western Pacific Railroad Company, June 23, 1870—name, "Central Pacific Railroad Company."

The San Francisco and Oakland Railroad Company, and The San Francisco and Alameda Railroad Company, June 29, 1870—name, "San Francisco, Oakland, and Alameda Railroad Company."

Central Pacific Railroad Company, California and Oregon Railroad Company, San Francisco, Oakland, and Alameda Railroad Company, San Joaquin Valley Railroad Company, August 23, 1870—name, "Central Pacific Railroad Company."

CAPITAL STOCK.

1. Capital stock authorized by charter	$100,000,000 00
2. Capital stock authorized by votes of company	100,000,000 00
3. Capital stock issued [number of shares, 592,755]; amount paid in	59,275,500 00
5. Total amount paid in as per books of the company	59,275,500 00
8. Par value of shares issued	100 00
9. Total number of stockholders	411
10. Number of stockholders in California	46
11. Amount of stock held in California	25,672,000 00

DEBT.

12. Funded debt as follows:		
Bonds		
Interest paid on same during year	$3,431,374 10	
13. Total amount of funded debt		$55,672,000 00
14. Unfunded debt:		
Incurred for construction, equipment, or purchase of property		$5,761,818 29
All other debts, current credit balances, etc.: unclaimed dividends		5,337 00
Interest paid on unfunded debts	$283,950 84	
United States subsidy bonds		27,855,680 00
15. Total amount of unfunded debt		33,622,835 29
16. Total gross debt liabilities		$89,294,835 29
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:		
Cash on hand		$3,237,031 66
Material and supplies on hand		1,793,322 09
Sinking funds		4,202,814 17
Other securities and debt balances		2,620,300 94
United States Transportation and Sinking Fund accounts		5,499,761 77
		$17,353,230 63
18. Total net debt liabilities		$71,941,604 66
19. Amount of bonds or stock of other companies guaranteed, principal or interest, or on which interest is paid by this company, giving name of each:		
California Pacific Railroad Company		
1,600 bonds at $1,000 each		$1,600,000 00
6,000 bonds at $500 each		3,000,000 00
Principal and interest guaranteed		
Stockton and Copperopolis Railroad Company		
1,000 bonds at $500 each		$500,000 00
Principal and interest guaranteed		

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

	To December 31, 1880.
1. Grading and masonry	Items No. 1 to No. 9—nothing has been kept segregated, it is impossible to show them separately.
2. Bridging	
3. Superstructure, including rails	
4. Land	
Land damages	
Fences	
5. Passenger and freight stations	
6. Engine houses, car sheds, and turn-tables	
7. Machine shops, including machinery and tools	
8. Interest	
9. Engineering	
Agencies, salaries, and other expenses during construction	
11. Total cost of construction	$136,948,680 69

Equipment.

	Number.	To December 31, 1880. Cost.
12. Locomotives	226	$2,693,618 40
13. Snow plows on wheels	7	37,536 02
14. Parlor cars	41	* 1,644,729 50
15. Sleeping cars	220	
16. Passenger cars, 148, and emigrant cars, 72	10	
Mail cars	46	
Baggage cars	4,560	3,671,219 50
17. Freight cars	723	
Other cars		
18. Total for equipment	5,842	$8,047,103 42

* These are charged in one account.

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

19. *Lands.*

	To December 31, 1880.
San Francisco, Block 9	$343,108 64
Oakland Point	813,591 40
Alameda County	215,611 67
Ogden	13,051 22
Marysville	7,300 00
Sacramento City and other points	74,422 37
Sacramento City, hospital property	62,875 77
	$1,529,961 07

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20. *Stock of Other Roads.*

Stocks.	To December 31, 1880.		
	Number of Shares.	Price Paid.	
		Per Share.	Total.
Coos Bay Coal Co., (stock and lands)	16,298	$9.685	$157,849 33
Wells, Fargo & Co.	5,000	95.37	476,859 82
(These items are included in item 17, page 2, "Other Securities and Debt Balances.")			

23. Steamboat property:

Ferry Steamers—Alameda, Amador, Capital, El Capitan, Oakland, Thoroughfare, Transit. Cost of all ferry steamers are included in construction account.

River Steamers—Amelia, Chin-du-Wan, Dover, Enterprise, Flora, Gov. Dana, Julia, Yosemite, Apache, Modoc. River steamers were purchased by the company with other property, barges, real estate, etc., and the price of each cannot be given.

Barges—Ace of Spades, Aliso, Farmer, Gov. Hayes, Jacinto, Mono, Moulton, Yolo, General Garfield. The cost of steamboats, barges, and other steamboat property, to December 31, 1880, is $783,001 60. This includes fifty vara lot and improvements, corner of Broadway and Front Streets, San Francisco.

25. *Other property purchased.*

	To December 31, 1880.
Office furniture, safes, etc.	$141,774 26
Telegraph instruments	13,997 78
Shops and rolling mill at Sacramento	1,052,589 20
All other shops included in construction account	705,490 69
	$1,913,851 93

32. SINKING AND CONTINGENT FUNDS.

Showing amount of same and their purpose.

Applicable to Redemption of what Bonds.		On Hand Dec. 31, 1879.	Received during Year.	On Hand Dec. 31, 1880.
Character.	Series.			
No. 1. Convertible mortgage		$1,186,713 55	$96,407 26	$342,000 00
No. 2. California State aid		728,835 38	109,209 77	838,045 15
No. 3. First mortgage	A, B, C, D	728,835 38	109,209 77	838,045 15
No. 4. First mortgage	E, F, G, H, I	524,281 26	92,592 00	616,873 26
No. 5. First mortgage, Western Pacific	A and B	108,057 17	33,778 46	141,835 63
No. 6. First mortgage, California and Oregon	A and B	463,440 16	137,649 36	601,089 52
No. 7. Income bonds		328,500 00	346,625 46	647,925 46
No. 8. First mortgage, San Francisco, Oakland, and Alameda			100,000 00	100,000 00
No. 9. First mortgage, San Joaquin Valley			50,000 00	50,000 00
		$4,068,662 90	$1,075,272 08	$4,202,814 17

NOTE.—The funds are loaned at interest, and the interest added to the funds yearly, as it accumulates.

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

8. Engineering agencies, salaries, and other expenses during construction	$1,927,65
13. Passenger, mail, and baggage cars	16,63
14. Freight and other cars (detailed below):	
Cars added during year as follows:	
Caboose cars — 5	
Station cars — 2	
Pile driver cars — 1	
Dump cars — 30	
Total — 38	
17. Any other expenditures charged to property account:	
Real estate	14,69
Rolling mill and shops at Sacramento	18,55
Machinery in shops	13,72
Steamers and barges, Sacramento River	140,89
20. Net addition to property account for the year	$2,132,15

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$4,203,53
2. Derived from passengers from and to other roads, over roads operated by this company	1,616,25
4. Derived from other sources belonging to passenger department:	
Sleeping cars	193,12
5. Derived from express and extra baggage	293,70
6. Derived from mails	510,97
7. Total earnings from passenger department	$6,817,60
8. Derived from local freight on roads operated by this company	$10,612,7
9. Derived from other roads as tolls or for use of freight cars	6,8
10. Derived from freight from and to other roads on joint tariff	2,633,1
12. Total earnings from freight department	$13,252,7
13. Derived from rents for use of road and equipment, when leased:	
Miscellaneous earnings	$288,9
Rent of telegraph lines	87,0
Rent of warehouses, stations, etc	61,8
14. Total transportation earnings	$20,508,1
15. Earnings per mile of road operated	$8,2
16. Earnings per train mile (total passenger and freight)	
18. Income derived from all other sources (including accretions from Sinking Funds, investments in stock, bonds, steamboat property, transportation lines, etc.):	
Interest on Sinking Funds	254,6
Operating river steamers	3,5
Land grant bonds redeemed with proceeds of land sales	200,0
Dividends, etc	399,4
19. Total income derived from all sources	$21,365,7

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$217,5
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
Superintendence, general offices, and miscellaneous expenses	893,1
Legal expenses	155,5
Civil engineering	16,6
Land department expenses (balance)	59,4
Damage for stock killed, etc.	4,8
3. Insurance premiums and losses by fire, and damages for fires set by engines.	44,2
4. Telegraph expenses	116,5
Total	$1,508,1
6. Proportion belonging to passenger department	$497,6
7. Proportion belonging to freight department	1,010,4

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Class II—Maintenance of ways and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)		$1,220,871 56
3. Steel rails laid, deducting old rails taken up:		
Number of miles, 144.5278; weight per yard, 50 lbs.		534,984 94
Number of miles, 111.8570; weight per yard, 60 lbs.		
4. New ties. (Number, 266,627;) cost		128,677 18
5. Repairs of bridges		136,568 75
6. Repairs of buildings		90,721 20
7. Repairs of and additions to machine shops		
Repairs of snow sheds		102,675 83
8. Repairs of fences, road crossings, and signs		26,408 33
9. Removing ice and snow		77,015 34
10. Repairs of locomotives		417,918 10
12. Repairs of snow plows		1,282 52
14. Fuel for engines:		
Number of cords of wood, 65,510; cost		310,087 03
Number of tons of coal, 172,769⅔; cost		1,214,497 39
15. Water and water stations		99,087 24
16. Fuel for stations and shops	For shops, charged pro rata to work, / For stations charged to "station service,"	39,317 85
18. Switchmen, watchmen, flag and signalmen		Included in "train service."
19. Total		$4,400,113 26
20. Proportion of same to passenger department		$1,452,037 38
21. Proportion of same to freight department		2,948,075 88

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars		$268.818 20
2. Officers' cars		9,660 45
3. Damages and gratuities, passengers		10,218 20
4. Salaries, wages, and incidentals of passenger trains		462,584 00
Salaries, wages, and incidentals of ferries		524,225 94
5. Salaries, wages, and incidentals of passenger stations		217,509 62
8. Total		$1,493,016 41

Class IV—Freight traffic expenses.

1. Repairs of freight cars		$383,501 00
Repairs of dump and work cars		6,908 23
3. Damages and gratuities, freight		11,619 85
4. Salaries, wages, and incidentals of freight trains		939,185 71
Salaries, wages, and incidentals of ferries		224,668 26
5. Salaries, wages, and incidentals of freight stations		441,610 42
7. Amount paid other roads for balance of mileage of freight cars		10,437 03
8. Total		$2,017,930 50
9. Total expenses of operating the road embraced in Classes I, II, III, and IV		$9,419,182 37
10. Per train mile (total passenger and freight)	1.358	
11. Percentage of expenses to total transportation earnings	45.929	
12. Amount paid other companies as rent for use of road, specifying each company, the amount and basis on which rent is computed:		
Southern Pacific Railroad, of California		1,650,600 00
Southern Pacific Railroad, of Arizona		451,875 48
Southern Pacific Railroad, of New Mexico		19,969 47
California Pacific Railroad		600,000 00
Northern Railway & San Pablo & Tulare Railroad		570,000 00
Los Angeles & Independence Railroad		24,629 00
Los Angeles & San Diego Railroad		5,564 00
Pacific Improvement Company		12,000 00
Sacramento & Placerville Railroad		7,200 00
Berkeley Branch Railroad		6,536 00
Stockton & Copperopolis Railroad		25,000 00
Amador Branch Railroad		40,750 00
Union Pacific Railway		40,303 55
13. Total expenses		$12,873,609 87

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$8,492,115 79
2. Percentage of same to capital stock and net debt	.06 47/100	
3. Percentage of same to total property and assets	.07 29/100	
4. Interest accrued during the year:		
On funded debt	3,431,374 10	
On other debt	283,950 84	
Total		$3,715,324 94
5. Dividends declared (6 per cent) for the year. Amount		3,406,530 00
6. Date of last dividend declared August 1st	$1,778,265 00	
7. Balance for the year, or surplus		$1,370,260 85
8. Surplus at commencement of the year		15,382,538 61
10. Total surplus, December 31, 1880		$16,752,799 46
11. Paid to sinking funds, in hands of Trustees		$1,075,272 08

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from Passenger Department, as per "Revenue for the Year," No. 7		$6,817,603 64
2. Per passenger train mile	$2.9790	
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6		$497,680 26
4. Expenses, proportion of "Maintenance of Ways and Buildings, and Movement Expenses," as per Class II, No. 20		1,452,037 38
5. Expenses, "Passenger Traffic," as per Class III, No. 8		1,493,016 41
6. Total expenses		$3,442,734 05
7. Per passenger train mile	$1.5044	
8. Net earnings		$3,374,869 59
9. Per passenger train mile	$1.4746	

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from Freight Department, as per "Revenue for the Year," No. 12		$13,252,730 58
2. Per freight train mile	$2.8515	
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7		$1,010,441 94
4. Expenses, proportion of "Maintenance of Ways and Buildings, and Movement Expenses," as per Class II, No. 21		2,948,075 88
5. Expenses, "Freight Traffic," as per Class IV, No. 8		2,017,930 50
6. Total expenses		$5,976,448 32
8. Net earnings		$7,276,282 26

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GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.	
Cost of road	$136,948,680 69
Cost of equipment	8,047,103 42
Other investments	4,226,814 60
Supplies and materials on hand	1,793,322 09
Sinking funds in hands of Trustees	4,202,814 17
Cash, cash assets, and other items: cash	3,237,031 66
United States transportation and sinking fund accounts	5,499,761 77
Bills receivable	1,572,823 56
Accounts receivable	412,768 23
Stocks and bonds owned	634,709 15
Total	$166,575,829 34
Credits.	
Capital stock	$59,275,500 00
Funded debt	55,672,000 00
Other debts: United States subsidy bonds	27,855,680 00
Bills payable	955,746 60
Accounts payable	4,806,071 69
Unclaimed dividends	5,337 00
Hospital fund	95,175 67
Trustees land mortgage	425,744 93
Sinking fund uninvested	254,914 17
Contract Wells, Fargo & Co.	476,859 82
Profit and loss	16,752,799 46
Total	$166,575,829 34

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
By balance to credit this account January 1, 1880		$15,382,538 61
By earnings for the year 1880		20,508,112 88
By interest on sinking funds		254,617 08
By operating river steamers earnings		3,527 52
By land grant and bonds redeemed with proceeds of land sales		200,000 00
By dividends on Wells, Fargo & Co.'s stock		51,328 00
By contract with Wells, Fargo & Co; stock sold		348,140 18
To operating expenses	$12,045,668 89	
To interest	3,715,324 94	
To taxes	217,523 35	
To general and miscellaneous expenses	378,696 82	
To legal expenses	155,586 57	
To civil engineering	16,645 61	
To land department expenses	59,488 63	
To dividends Nos. 9 and 10	3,406,530 00	
Balance	$16,752,799 46	
By balance brought down		$16,752,799 46

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use (eastward):

From Sacramento to Newcastle	Nov. 1, 1864.
From Sacramento to Auburn	May 14, 1865.
From Sacramento to Clipper Gap	June 19, 1865.
From Sacramento to Colfax	Sept. 11, 1865.
From Sacramento to Dutch Flat	July 5, 1866.

From Sacramento to Alta	July 11, 18
From Sacramento to Cisco	Dec. 3, 18
From Sacramento to Truckee	April 3, 18
From Sacramento to Reno	June 19, 18
From Sacramento to Wadsworth	July 22, 18
From Sacramento to Brown's	August 21, 18
From Sacramento to Oreana	Sept. 20, 18
From Sacramento to Winnemucca	October 1, 18
From Sacramento to Argenta	Nov. 19, 18
From Sacramento to Elko	January 25, 18
From Sacramento to Carlin	March 15, 18
From Sacramento to Terrace	May 27, 18
From Sacramento to Promontory	May 29, 18
From Sacramento to Ogden	May 29, 18

1. Date when the road or portions thereof were opened for public use (westward):

From Sacramento to Galt	May 15, 18
From Sacramento to Lodi	August 4, 18
From Sacramento to Stockton	August 14, 18
From Sacramento to San José	Sept. 15, 18
From Sacramento to Alameda Wharf	Sept. 8, 18
From Sacramento to San Francisco, about	Dec. 1, 18

1. Date when the road or portions thereof were opened for public use (northward):

From Roseville Junction to Lincoln	October 24, 18
From Roseville Junction to Wheatland	October 28, 18
From Roseville Junction to Yuba	Sept. 19, 18
From Roseville Junction to Marysville	June 1, 18
From Roseville Junction to Nelson	May 31, 18
From Roseville Junction to Chico	July 2, 18
From Roseville Junction to Sesma	July 11, 18
From Roseville Junction to Tehama	August 28, 18
From Roseville Junction to Red Bluff	Dec. 6, 18
From Roseville Junction to Redding	Sept. 1, 18

1. Date when the road or portions thereof were opened for public use (southward):

From Lathrop to Modesto	Nov. 8, 18
From Lathrop to Merced	Jan. 25, 18
From Lathrop to Sycamore	April 1, 18
From Lathrop to Fresno	May 28, 18
From Lathrop to Goshen	August 1, 18

2. Length of main line of road from Oakland Wharf to terminus	872.0
Length of main line in California, Oakland Wharf to State line	273.7
Length of main line in other States, Nevada and Utah	598.3
5. Branches owned by the company	
Names and description of; single or double track:	
Oregon Branch, single track	152.1
Visalia Branch, single track	146.0
San José Branch, single track	17.5
Oakland Branch, single track*	5.6
Alameda Branch, single track*	11.0
6. Total length of branches owned by the company	332.3
7. Total length of branches owned by the company in California	332.3
10. Total length of road belonging to this company	1,204.4
11. Aggregate length of siding and other tracks not enumerated above	198.1
12. Same in California	134.2
13. Aggregate length of track belonging to this company computed as single track	1,402.4
14. Same in California	740.3
15. Total lengths of steel rail in tracks belonging to this company, not including steel top rail; (weight per yard)	1,047.9
15. Number of spans of bridges of twenty-five feet and upwards, in California	
Number of spans of bridges of twenty-five feet and upwards, outside State	
18. Number of wooden bridges (aggregate length, 117,189 feet), in California	
Number of wooden bridges (aggregate length, 5,741 feet), outside State	
Miles of embankment replaced by bridges or trestle-work, during year, in California	1.1
19. Number of crossings of highways at grade, in California	
Number of crossings of highways at grade, outside State	
20. Number of crossings of highways over railroad, in California	

*Oakland and Alameda Branches run parallel on Seventh street, Oakland, making double track used interchangeably by both branches for a distance of 2.1386 miles.

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21. Number of crossings of highways under railroad, in California	8
22. Number of highway bridges eighteen feet above track, in California	1
24. Number of highway crossings at which gates or flagmen are maintained, in California	2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	504
Number of highway crossings at which there are neither electric signals, gates, nor flagmen, outside State	204
27. Number of railroad crossings at grade	10
(One crossing of local line at Oakland Point, connecting with Northern Railway; one crossing of local line, Oakland Wharf, (temporary); one crossing of Alameda Branch, at Alice street; one crossing of San Pablo and Tulare Railroad, at Tracy; one crossing of South Pacific, at Alameda; one crossing of Stockton and Copperopolis Railroad, at Stockton; one crossing of Sacramento and Placerville, at Brighton; one crossing of California Pacific, at Sacramento; one crossing of Oroville Railroad, at Marysville; one crossing of Utah Central, at Ogden. There are, also, five (5) street railroad crossings, in Oakland and Alameda.)	
28. Number of railroad crossings over other roads	1
(One crossing of Nevada County Narrow Gauge Railroad, near Colfax.)	

ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY UNDER LEASE OR CONTRACT.

30. *Names, Description, and Length of Each.*

Name of Company.	Termini. From—	Termini. To—	Length, Miles.	Dates of Lease. From—	Dates of Lease. To—	Amount of Rental.
Union Pacific	Ogden	Five miles west	5.00	June 30, 1874	1,000 years	The same rate per mile as Union Pacific Railroad Co. earns net per mile on the line of its road operated by itself.
Southern Pacific of California	Huron	Yuma	528.56	Jan. 1, 1880	5 years	$250 per mile per month.
Southern Pacific of California	Los Angeles	Wilmington	21.64	Jan. 1, 1880	5 years	$250 per mile per month.
Southern Pacific of Arizona	Yuma	New Mexico line	383.21	Nov. 1, 1880	5 years	$125 per mile per month to June 30; $135 per mile per month balance of year.
Southern Pacific of New Mex.	New Mexico line	Deming	93.80	Nov. 1, 1880	5 years	$135 per mile per month October, November, and December.
Los Angeles and San Diego	Florence	Santa Ana	27.83	Nov. 1, 1880	5 years	$100 per mile per month from November 1, 1880, and taxes.
Los Angeles and Independence	Los Angeles	Santa Monica	16.83	Nov. 1, 1880	5 years	$2,126 30 per month to October 31; $1,683 for balance of the year, and taxes.
Sacramento and Placerville	Sacramento	Brighton	5.64	Notice		$600 per month for use of track only.
Stockton and Copperopolis	Stockton	Milton	49.0	Jan. 1, 1875	Jan. 1, 1905	(The principal and interest on one thousand five per cent $500 thirty-year bonds, and net earnings on all expenses to apply on
Stockton and Copperopolis	Peters	Oakdale		Jan. 1, 1875	Jan. 1, 1905	floating debt of Stockton and Copperopolis Railroad Co.
Amador Branch	Galt	Ione	27.20	Nov. 1, 1880	10 years	$2,126 30 per month to Oct. 31, and $3,500 per month for balance of year, and taxes.
Berkeley Branch	Shell Mound	Berryman's	3.84	Nov. 1, 1880	10 years	$500 per month to Oct. 31, and $768 per month for balance of year, and taxes.
Northern Railway	West Oakland	Near Martinez	112.61	Jan. 1, 1880	5 years	$570,000 per annum.
Northern Railway	Woodland	Willows				
Northern Railway	Port Costa	Suisun				
San Pablo and Tulare	Near Martinez	Tracy	46.51	Jan. 1, 1880	5 years	
California Pacific	Vallejo Junction	Vallejo				
California Pacific	Vallejo	Sacramento	115.44	Jan. 1, 1880	July 1, 1905	$600,000 per annum.
California Pacific	Davisville	Knight's Land'g				
California Pacific	Napa Junction	Calistoga				$100,000 per month.
Western Development Co.	Colorado River	Bridge	700 feet			

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31. Total length of above roads	1,436.93
32. Total length of above roads in California	954.92
33. Total length of above roads in other States:	
Utah	5.00
Arizona	383.21
New Mexico	93.80
34. Total miles of road operated by this company (average)	2,467.02
35. Total miles of road operated by this company in California	1,563.06
36. Number of stations on all roads operated by this company	438
37. Number of stations on all roads owned by this company	227
38. Same in California	151
39. Miles of telegraph on line of road operated by this company (average)	2,467.02
40. Miles of telegraph owned by this company	1,227.00
41. Number of telegraph offices in company stations	168
43. Number of telegraph stations operated jointly by railroad and telegraph companies	168

ROLLING STOCK.

	Number.	Average Weight.
1. Locomotives	226	
Average weight of engines in working order		65,697
Maximum weight of engines in working order—80,000		
2. Tenders	222	
Average weight of tenders full of fuel and water		50,000
Maximum weight of tenders full of fuel and water—70,000		
Average joint weight of engines and tenders		115,697
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender—44 7/12 feet		
4. Total length of heaviest engine and tender over all—53 7/12 feet		
5. Snow plows	9	38,384
6. Passenger cars	261	
Average weight		40,740
Maximum weight—63,000		
7. Mail, and baggage cars, and express	56	36,920
8. Eight-wheel box freight cars	2,550	19,000
10. Eight-wheel platform cars	2,016	15,000
12. Other cars	644	
Coal and gravel		
Caboose cars	79	26,700
13. Total	5,842	

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	4,567
15. Number of locomotives equipped with train brakes	93
Kind of brake	Westinhouse air.
16. Number of cars equipped with train brakes	299
Kind of brake	Westinhouse air.
17. Number of passenger cars with Miller platform and buffer	261

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	2,288,610
2. Rate of speed of express passenger trains, including stops, miles per hour	14 to 30
3. Rate of speed of accommodation trains, including stops, miles per hour	20 to 25
4. Miles run by freight trains	4,647,589
5. Rate of speed of express freight trains, including stops	(No trains of this class.)
6. Rate of speed of accommodation freight trains, including stops, miles per hour	7 to 12
7. Miles run by other trains, and for what purpose	1,714,252
Switching—1,067,546	
Work trains—646,706	
8. Total train miles run	8,650,451

9. Number of tons carried (not including gravel)	2,099,43
Number of tons freight from other States, carried	187,63
Number of tons freight in this State, carried	1,911,79
Number of tons freight produced in this State, carried	1,147,07
Number of tons of each class of freight, produced in this State, carried, approximate:	
Products of vine and orchard	34,41
Products of field	516,18
Products of wines	80,29
Products of forest	206,47
Live stock	91,76
Hides	2,86
Honey	67
Ice	17,20
Wool	17,20
Salmon	2,86
Manufactures	45,88
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cent
16. Lowest rate of fare per mile for any distance (single fare):	
Main Line—San Francisco to Fruitvale	.01⅔ cent
Ferry—San Francisco to Alameda	.015 cent
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	Non
21. Highest rate of freight per ton per mile for any distance	15 cent
22. Lowest rate of freight per ton per mile for any distance	.0048 cent
30. Number of persons regularly employed by company, including officers	7,79
Average monthly pay of employés, other than officers	$63
Average monthly pay of engine drivers	131
Average monthly pay of passenger conductors	110 00 to 115
Average monthly pay of freight conductors	85 00 to 100
Average monthly pay of baggagemasters	75
Average monthly pay of brakemen, flagmen, and switchmen	65 00 to 80
Average monthly pay of section men—Chinese, $25 89; white	46
Average monthly pay of mechanics in shops	79
Average monthly pay of laborers	52 to 69

LIST OF ACCIDENTS IN CALIFORNIA.

	From causes beyond their own control, in California.		From their own misconduct or carelessness, in California.		Total, in California.		Total on Whole Road Operated	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured
Passengers		17	2	29	2	46	5	
Employés		12	12	127	12	139	19	1
Others			23	43	23	43	29	
Total		29	37	199	37	228	53	2

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CENTRAL PACIFIC RAILROAD AND LEASED LINES IN CALIFORNIA,

Statement of each Accident for the year ending December 31, 1880.

Date.	Name.	Passenger, Employé, or Trespasser.	Station.	Cause of Accident.	Extent of Injury.
January 1	Albert Broer	Trespasser	Union	Driving across track	Instantly killed.
January 3	Wm. McFarland	Employé	Tracy	Coupling cars	Instantly killed.
January 7	Augustine Neva	Trespasser	Merced	Getting off train	Finger slightly injured.
January 9	Jas. H. Furlong	Employé	Haywards	Stepping from train	Two toes amputated.
January 9	Geo. Hamilton	Employé	Emigrant Gap	Fell off engine	Ankle sprained.
January 9	Wm. Hackett	Employé	Truckee	Struck against snow shed	Head slightly injured.
January 10	I. P. Smith	Employé	Fresno	Coupling cars	Fatally injured.
January 12	Unknown man	Trespasser	Blue Cañon	Fell off train	Head slightly bruised.
January 12	Frank Hood	Employé	Berryman	Jumping off train	Instantly killed.
January 13	Chinaman	Trespasser	Niles	On track, and struck by engine	Knee slightly injured.
January 13	Eddie Griffith	Trespasser	Oakland	Jumping off train	Severely bruised.
January 13	Fred. Cramer	Trespasser	Stock Yards	On track, and struck by engine	Foot injured slightly.
January 14	H. Conolly	Employé	Stockton	Coupling cars	Leg severely bruised.
January 19	I. H. Walker	Passenger	Oakland	Jumping off train	Finger amputated.
January 26	O. L. Ferguson	Employé	San Francisco	Fell between cars	Shoulder dislocated.
January 27	Wm. B. Tohey	Trespasser	Oakland	Jumping on train	Fatally injured.
January 31	L. B. Richardson	Passenger	Shady Run	Rear collision	Slight cuts and bruises.
January 31	Geo. Gunnald	Passenger	Shady Run	Rear collision	Chin slightly cut.
February 1	I. Brigsolara	Passenger	Oakland	Jumped off train	Shoulder slightly injured.
February 2	Charles Scholl	Trespasser	Oakland	Jumped off train	Head slightly bruised.
February 2	Chinaman	Passenger	Minturn	Jumped off train	Head slightly cut.
February 4	Samuel M. Hart	Trespasser	San Gabriel	Asleep on track, and run over	Shoulder slightly bruised.
February 6	Henry Stin, Sr.	Passenger	Stock Yards	Jumping off train	Fatally injured.
February 8	Jos. Silva	Passenger	Shell Mound	Jumping off train	Leg broken.
February 9	Geo. Hammond	Employé	Cameron	Struck by spout of water tank	Fatally injured.
February 10	J. M. Duncan	Employé	Galt	Getting down from car	Slightly bruised.
February 11	Wm. Condrey	Trespasser	Penryn	Fell from car	Ankle sprained.
February 14	C. F. Schurr	Employé	Truckee	Fell from car	Arm fractured.
February 16	Henry Cross	Trespasser	Ceres	Fell from car	Arm fractured.
February 16	F. S. Langdon	Employé	Tulare	Jumping off train	Arm fractured.
February 20	J. A. Devener	Trespasser	Watts	Walking on track, and run over	Ankle sprained.
February 21	Jas. McDonald	Trespasser	Alta	Crushed between cars	Instantly killed.
February 26	Jas. Murphy	Employé	Berlin	Coupling cars	Foot bruised.
February 26	Chas. Carson	Employé	Oakland	Coupling cars	Hand severely injured.
February 28	P. H. Garvey	Employé	Stockton	Coupling cars	Finger slightly injured.
					Ankle severely crushed.

March 3	Unknown man	Trespasser	Poso	On track, and run over	Instantly killed.
March 3	W. J. Smith	Passenger	Stockton	Getting on train	Shoulder dislocated.
March 4	J. Keleher	Employé	Elmira	Getting on train	Arm fractured.
March 8	Ralph Ellis	Passenger	Lodi	Getting off train	Head slightly injured.
March 11	Wallis Scott	Employé	Oakland	Fell from train	Arm broken.
March 12	Thos. Thomas	Employé	Oakland	Struck by moving car	Left arm broken.
March 12	H. W. Hanna	Employé	Port Costa	Getting off car	Ankle sprained.
March 15	Unknown man	Passenger	Oakland	Stepping off train	Knee slightly injured.
March 27	John Stewart	Employé	Oakland	Fell from car	Spine severely injured.
March 28	G. Raymond	Trespasser	Oakland	Getting on train	Face and hands bruised.
March 28	Rosetta Cowan	Passenger	Alameda	Jumping on train	Slightly bruised.
March 31	George A. Andrews	Employé	Cordelia	Getting on train	Ankle sprained.
April 2	E. Sullivan	Employé	Oakland	Coupling cars	One finger amputated.
April 3	John R. Kelley	Passenger	Emigrant Gap	Switching collision	Head and hand injured.
March 3	Unknown man	Trespasser	Cabazan	Train broke apart and collided	Instantly killed.
March 3	Robert Hunt	Employé	Cabazan	Train broke apart and collided	Severe bodily injuries.
March 3	J. C. Woodheck	Employé	San Francisco	Coupling cars	Finger slightly injured.
March 5	A. Erchler	Trespasser	Alameda	Jumped off train	Head bruised.
March 7	C. H. Ball	Employé	Oakland	Getting off engine	Ankle sprained.
March 11	Unknown man	Passenger	Oakland	Jumped from train	Head slightly injured.
March 12	T. Nash	Trespasser	Niles	On track and run over	Instantly killed.
March 13	W. Broadwell	Employé	Oakland	Coupling cars	Head bruised.
March 14	B. McAvey	Employé	Oakland	Coupling cars	Hand bruised.
March 14	J. L. Lymington	Employé	Benicia	Stepping from engine	Ankle sprained.
March 19	Wm. Stewart	Employé	Niles	On track and run over	Fatally injured.
March 20	A. Merryfield	Employé	Tehama	Coupling cars	Finger amputated.
March 22	Chinaman	Trespasser	Seven Palms	Struck by engine	Arm broken.
March 23	James C. Woodin	Employé	Tulare	Coupling cars	Slightly bruised.
March 25	M. A. Dell	Employé	Colton	Coupling cars	Eye cut.
March 26	W. Johnson, alias Deemer	Trespasser	Martis	Getting on train	Leg amputated.
March 26	Bert. Goodfellow	Trespasser	Avon	Fell from train	Fatally injured.
March 27	James Thompson	Trespasser	Vallejo	Driving across track	Leg broken.
March 29	Dan. Driscoll	Employé	Los Angeles	Jumping off train	Slightly injured.
May 4	James Stevenson	Employé	Napa	Coupling cars	Hand slightly injured.
May 8	Unknown man	Passenger	Oakland	Jumping off cars	Ankle sprained.
May 11	M. T. Gilbert	Employé	Brighton	Coupling cars	Chest bruised.
May 12	Mrs. M. Lewis	Passenger	Ceres	Fell down on track	Shoulder fractured.
May 13	Miss Kennedy	Passenger	Oakland	Stepping off train	Hip slightly bruised.
May 15	J. H. Furlong	Employé	Niles	Coupling cars	Side slightly bruised.
May 16	Wm. Laflend	Employé	Pampa	Fell between tender and engine	Instantly killed.
May 16	J. E. Biglow	Employé	Stock yards	On track and run over	Instantly killed.
May 18	Frank Lloyd	Trespasser	Oakland	Getting on train	Head severely injured.
May 18	Chinaman	Passenger	Pinole	Jumping from train	Seriously injured.

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STATEMENT OF EACH ACCIDENT FOR THE YEAR ENDING DECEMBER 31, 1880—Continued.

Date.	Name.	Passenger, Employé, or Trespasser.	Station.	Cause of Accident.	Extent of Injury.
May 21	Mrs. Minturn	Passenger	Lathrop	Cars coming together hard	Slightly injured.
May 21	Phil. Heaney	Employé	Lamore	On track and run over	Seriously injured.
May 26	Chinaman		Port Costa	Fell from cars	Arm broken.
May 27	P. O'Connor		Antelope	Fell off engine	Slightly injured.
May 28	Mrs. B. Eddy	Passenger	Martinez	Overtaking collision	Slightly injured.
May 28	Solon Green	Passenger	Martinez	Overtaking collision	Slightly injured.
May 28	Peter Lamson	Passenger	Martinez	Overtaking collision	Slightly injured.
May 28	P. Peterson	Passenger	Martinez	Overtaking collision	Slightly injured.
May 29	Charles Schmidt	Trespasser	Napa	Getting on train	Slightly injured.
May 29	G. Backus	Employé	St. Helena	Fell off platform	Head severely injured.
June 3	D. McClish (supposed)	Trespasser	Roseville	On track and run over	Leg broken.
June 4	Daniel Reeves	Trespasser	Roseville	Getting on cars	Instantly killed.
June 4	Daniel Butler	Employé	Tulare	Coupling cars	Shoulder severely injured.
June 4	Unknown man	Trespasser	West Berkeley	Struck by engine	Slight bodily injury.
June 5	Frank Bent, alias Joint	Trespasser	Truckee	On track and run over	Fatally injured.
June 6	Mrs. M. Hayes	Passenger	Sumner	Switching collision	Leg broken.
June 6	Indian man	Trespasser	Spadra	Fell from train	One rib broken.
June 7	Thomas Williams	Employé	Tehachapi	Fell off engine	Arm amputated.
June 9	George Herring	Trespasser	Oakland	Jumped from train	Head slightly injured.
June 10	Jeff. Fruit	Employé	Los Angeles	Coupling cars	Chin slightly cut.
June 16	Paul Reinbath	Trespasser	Dunnigan's	On track and run over	Finger and thumb injured.
June 18	B. McAvery	Employé	Oakland	Fell from cars	Instantly killed.
June 18	Charles Tappen	Employé	Niles	Slipping off engine	Arm and thigh bruised.
June 19	Chinaman	Passenger	Oakland	Jumping from train	Ankle sprained.
June 20	M. H. Patton	Employé	Mojave	Switching collision	Face bruised.
June 21	William Francklin	Trespasser	Willows	On track and run over	Slight injuries.
June 23	W. McDoal	Employé	Delano	Coupling cars	Fatally injured.
June 24	Noah Confield	Passenger	Goodyear's	Jumping from train	Finger injured.
June 24	Thomas Rolfe	Employé	Oakland	Coupling cars	Leg broken.
June 27	A. Blanchfield	Trespasser	Oakland	On track and struck by engine	Foot sprained.
June 28	Miss B. Hurlihy	Trespasser	Alameda	Jumping off train	Slightly injured.
July 2	W. D. Tilley	Employé	Savannah	Coupling cars	Slight bodily bruises.
July 3	H. W. Brydges	Employé	Galt	Coupling cars	Thumb slightly injured.
July 4	James Whelan	Employé	Summit	Getting off train	Fingers slightly injured.
July 5	I. Johnson	Employé	Wheatland	Unloading freight	Leg slightly bruised.
July 11	J. W. Winston	Passenger	Los Angeles	Finger caught in car door	Hand slightly injured.
July 11	E. Rosenbergh	Passenger	Oakland	Fell from train	End of finger amputated.
					Foot amputated.

July 15	V. Magnani	Trespasser	Stockton	Fell under car	Instantly killed.
July 15	Patrick Connolly	Employé	Oakland	Foot caught under car	Toes bruised.
July 15	William York	Employé	Oakland	Dump car turned over	Leg fractured.
July 16	Frank Leslie	Employé	Oakland	Fell off train	Back sprained.
July 17	A. L. Parnitt	Employé	Oakland	Coupling cars	Chest bruised.
July 17	E. Day	Employé	Los Angeles	Coupling cars	Finger slightly injured.
July 18	Jacob Thresher	Trespasser	Fresno	Getting on train	Shoulder dislocated.
July 20	A. W. Rich	Employé	Oakland	Getting on train	Foot slightly injured.
July 23	D. Regan	Employé	Sycamore	Fell from train	Knee bruised.
July 24	Patrick Brown	Trespasser	Clipper Gap	Fell from train	Severely injured.
July 25	John Lucas	Employé	Oakland	Coupling cars	Haud severely injured.
July 25	Mrs. M. Schumacher	Passenger	Madera	Fell under train	Instantly killed.
July 25	Peter Leboski	Trespasser	Oakland	Struck by engine	Severe bodily bruises.
July 26	Philip Scott	Employé	Modesto	Coupling cars	Finger slightly injured.
July 26	A. B. Allen	Employé	Stockton	Coupling cars	Thumb slightly injured.
July 26	C. S. Wright	Employé	Truckee	Struck against shed	Head slightly cut.
July 27	Jas. W. Ely	Employé	Lathrop	Coupling cars	Finger slightly injured.
July 27	Mrs. E. Campbell	Passenger	Tulare	Struck by train	Severely bruised.
July 30	David Roach	Employé	San Francisco	Fell from car	Severely bruised.
July 31	W. W. Wallace	Employé	Sumner	Coupling cars	Head bruised.
August 1	A. Costidian	Employé	Oakland	Unloading rock from car	Hand injured severely.
August 1	P. Rasmussen	Employé	Blue Cañon	On track and struck by engine	Head severely injured.
August 2	John Rooney	Employé	Emigrant Gap	Unloading timber from car	Back slightly injured.
August 2	J. M. Garcia	Employé	Colton	Coupling cars	Finger injured.
August 3	J. N. Seiler	Employé	Oakdale	Coupling cars	One finger amputated.
August 3	J. C. Woodin	Employé	Tulare	Handling freight in car	Foot bruised.
August 4	John Ainsly	Employé	Antelope	Getting on train	Back injured.
August 5	William Brown	Employé	Keene	Coupling cars	Finger amputated.
August 5	J. L. Perean	Employé	Oakland	Getting off train	Knee sprained.
August 6	Miss Meeker	Trespasser	Oakland	On track and struck by train	Face and back bruised.
August 9	J. M. Hayes	Employé	Oakland	On track and run over	Instantly killed.
August 9	John H. Watson	Trespasser	Fresno	On track and run over	Instantly killed.
August 10	Henry Brink	Trespasser	Alameda	Finger caught in car door	Finger slightly injured.
August 13	Charles Roberts	Trespasser	Los Angeles	Coupling cars	Hand severely crushed.
August 14	Mrs. R. Steimer	Passenger	Dos Palmas	Fell off train	Slightly bruised.
August 15	William Allen	Employé	Goodyear's	Coupling cars	Finger injured.
August 16	Henry Neeley	Employé	Cascade	Struck against a post	Shoulder slightly injured.
August 17	William Wright	Employé	Benicia	Hand caught in brake	Finger slightly injured.
August 17	C. S. Warner	Employé	Nelson	Fell from car	Slight injuries.
August 18	M. J. Cain	Employé	Modesto	Crushed between cars	Shoulder bruised.
August 19	Thomas O'Brien	Trespasser	Truckee	Getting on train	Arm amputated.
August 19	W. B. Baker	Employé	Stockton	Coupling cars	Injured internally.

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STATEMENT OF EACH ACCIDENT FOR THE YEAR ENDING DECEMBER 31, 1880—Continued.

Date.	Name.	Passenger, Employé, or Trespasser.	Station.	Cause of Accident.	Extent of Injury.
August 22	Chinaman	Trespasser	Oakland	Hung himself in car	Found dead.
August 22	J. R. Dwier	Passenger	Niles	Hand caught in car door	Finger amputated.
August 22	Louis Barsell	Trespasser	Washington	Jumped from train	Face bruised.
August 24	Miss L. Parkinson	Trespasser	McAvoy's	On track and run over	Fatally injured.
August 25	Manuel Rajo	Trespasser	Oakland	Getting on train	Head bruised.
August 26	J. E. Leake	Employé	Dunnigan	Coupling cars	Finger broken.
August 26	Chris. Martin	Employé	Colton	Coupling cars	Thumb severely injured.
August 27	Chinaman	Passenger	Strongs	Jumping from train	Arm fractured.
August 28	D. Lanahan	Trespasser	Sumner	Fell off train	Both feet cut off.
August 30	L. Chambers	Employé	Summit	Letting off brakes	Collar bone broken.
August 31	W. L. Curtis	Employé	Redding	Coupling cars	Finger severely injured.
September 3	S. W. Scott	Employé	Willows	Getting on train	Shoulder dislocated.
September 3	Unknown man	Trespasser	Bethany	Run over by train	Found dead.
September 3	R. Thorton	Employé	Gridley	Wood fell from tender	Head slightly cut.
September 4	John McNeil	Trespasser	Oakland	Fell off train	Ribs broken.
September 5	Geo. Webb	Employé	Red Bluff	Coupling cars	Hand severely crushed.
September 7	Sam. Hensey	Employé	Lorenzo	Switching collision	Shoulder slightly injured.
September 7	Geo. Rathborn	Employé	Sheridan	Coupling cars	Finger injured.
September 8	F. P. Muser	Employé	Cunega	Jumping from train	Ankle sprained.
September 8	Arthur Dugan	Employé	Willows	Coupling cars	Hand amputated.
September 8	C. A. Roberts	Employé	Willows	Struck against bridge	Severely bruised and cut.
September 9	Dan'l Baulch	Trespasser	Rocklyn	On track and struck by train	Fatally injured.
September 10	A. Veilinsky	Trespasser	Pampa	On track and run over	Instantly killed.
September 10	E. C. Coulter	Trespasser	Oakland	Struck by engine	Severely injured.
September 10	Thos. Buttby	Employé	Cordelia	Fell from cars	Bruised.
September 11	Sam'l Hall	Passenger	Stock Yards	Fell from train	Slightly bruised.
September 11	H. Quigley	Passenger	Marysville	Getting on train	Slightly bruised.
September 13	W. W. McCoy	Passenger	Chico	Stepping off train	Hip slightly injured.
September 18	W. M. Dean	Employé	Cisco	Struck against shed	Shoulder bruised.
September 18	Chinaman	Employé	Cisco	Struck against shed	Spine bruised.
September 20	J. Depangher	Employé	Sacramento	Coupling cars	Severely injured.
September 22	A. Hall	Employé	San José	Jumping off engine	Knee sprained.
September 23	Robt. Wheeler	Trespasser	Oakland	Getting on train	Toe bruised.
September 24	J. E. Leake	Employé	Dixon	Fell from train	Instantly killed.
September 24	Bernard Mullen	Trespasser	Oakland	Fell off car	Leg and back slightly injured.
September 25	H. O. Kaufman	Passenger	Oakland	Misplaced switch	Severely bruised.
September 25	W. C. Brown	Employé	Oakland	Misplaced switch	Drowned in cab of engine.

September 28	C. G. Wilhelmi	Passenger	Oakland	Jumped off train	Head bruised.
September 30	W. F. McAvary	Employé	Ceres	Getting on train	Foot sprained.
October 1	Unknown man	Trespasser	McConnell's	On track and struck by train	Instantly killed.
October 3	E. D. Black	Employé	Kt's Landing	Fell from train	Instantly killed.
October 5	Dan. Peterman	Employé	Cisco	Badly loaded freight	Foot severely bruised.
October 6	D. Murphy	Employé	Stockton	Fell from car	Hip slightly bruised.
October 6	S. Drinke	Trespasser	Oakland	Driving across track	Arm amputated.
October 11	L. A. Brawne	Employé	Milpitas	Coupling cars	Finger amputated.
October 14	Wm. Martin	Employé	Penryn	Fell from train	Instantly killed.
October 16	D. Calderwood	Employé	Port Costa	Coupling cars	Thumb slightly bruised.
October 16	Eddie Boyd	Trespasser	Berkeley	On track and run over	Fatally injured.
October 17	W. Gallagher	Trespasser	Oakland	On track and struck by train	Severely injured.
October 18	C. Lackren	Employé	Tulare	Setting brakes	Knee sprained.
October 19	J. J. Manning	Employé	San Pablo	Fell off train	Head bruised.
October 19	W. Watkinson	Employé	Oakland	Getting on train	Shoulder sprained.
October 20	J. H. Cook	Employé	Florin	Coupling cars	Finger cut off.
October 20	Miss Hallowwood	Passenger	Day Point	Jumped off train	Slightly injured.
October 20	M. Dandy	Trespasser	Kingsburgh	Squeezed between cars	Foot severely injured.
October 20	A. L. Rerar	Employé	Boca	Coupling cars	Thumb and two fingers cut off.
October 22	W. V. Dingman	Employé	Port Costa	Coupling cars	Hand seriously injured.
October 24	J. A. Cunningham	Employé	Oakland	Coupling cars	Finger injured.
October 24	Miss A. H. Jordan	Passenger	Oakland	Getting off train	Slightly bruised.
October 25	Jas. Sheely	Employé	Los Angeles	Coupling cars	Chest slightly injured.
October 26	P. Rossegan	Employé	Oakland	Struck by car	Back sprained.
October 26	M. Culitan	Passenger	Bantas	Stone maliciously thrown	Head slightly injured.
November 4	Chas. Hood	Employé	Dos Palmas	Coupling engine	Shoulder sprained.
November 4	Chas. Edwards	Employé	Oakland	Coupling cars	Two fingers injured.
November 4	M. J. Learey	Employé	Dutch Flat	Struck against switch	Knee injured.
November 9	Peter J. Pelser	Employé	Lathrop	Getting on engine	Instantly killed.
November 13	Chinaman	Employé	Port Costa	Switching collision	Foot crushed.
November 15	Elsie Williams	Trespasser	Oakland	Jumped off train	Severely bruised.
November 16	W. J. Edwards	Employé	Pinole	Struck against mail catcher	Head slightly injured.
November 16	Chinaman	Trespasser	Fruitvale	Struck by train	Foot amputated.
November 17	A. M. Bybee	Employé	Rocklin	On track and run over	Instantly killed.
November 17	N. S. Peck	Employé	Antelope	Struck against mail catcher	Head seriously injured.
November 18	Leslie Goff	Employé	Emigrant Gap	Meeting collision	Slight injuries.
November 18	H. Phillips	Employé	Emigrant Gap	Meeting collision	Slight injuries.
November 19	E. Baldwin	Employé	Summit	Coupling cars	Foot injured.
November 20	Tom. Rolfe	Employé	Ione	Tree obstructed track	Legs bruised.
November 22	C. S. Thurber	Employé	Sumner	Coupling cars	Hand slightly bruised.
November 23	Thomas O'Brien	Passenger	Gold Run	Overtaking collision	Side slightly injured.
November 23	Benjamin Austin	Passenger	Gold Run	Overtaking collision	Shoulder slightly injured.
November 23	P. Lemon	Passenger	Gold Run	Overtaking collision	Slight injuries.

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STATEMENT OF EACH ACCIDENT FOR THE YEAR ENDING DECEMBER 31, 1880—Continued.

Date.	Name.	Passenger, Employé, or Trespasser.	Station.	Cause of Accident.	Extent of Injury.
November 23	C. H. Young	Employé	Niles	Fell off train	Slightly bruised.
November 25	H. Borcherding	Employé	Truckee	Switching collision	Shoulder bruised.
November 27	Charles Ridley	Passenger	Yountville	Switching collision	Head slightly cut.
November 27	John Lucas	Employé	Oakland	Meeting collision	Face cut and bruised.
November 27	Mrs. J. A. Garrack	Passenger	Oakland	Meeting collision	Slightly injured.
November 27	Miss L. L. Paget	Passenger	Oakland	Meeting collision	Slightly injured.
November 27	John Price	Employé	Goshen	Coupling cars	Finger injured.
November 29	F. B. Dodge	Employé	Truckee	Struck against sheds	Head injured.
November 29	Thomas Goodbody	Trespasser	Pleasanton	Driving across track	Instantly killed.
November 29	John Tratt	Employé	Rocklin	Coupling cars	Two fingers injured.
November 30	E. F. Thompson	Employé	Williams	Coupling cars	Finger injured.
November 30	N. B. McSwain	Employé	Tipton	Coupling cars	Finger and thumb injured.
November 30	Edward Rowland	Employé	Oakland	Jumped from train	Rib bruised.
December 2	Edward Davis	Employé	Oakland	Coupling cars	Finger slightly injured.
December 4	H. A. Ahrend	Employé	Port Costa	Coupling cars	Slightly injured.
December 4	J. H. Steinhower	Employé	Brighton	Coupling cars	Foot slightly injured.
December 4	J. H. Moare	Employé	Blue Cañon	Getting off train	Slightly bruised.
December 6	J. A. Muldowney	Employé	Stockton	Coupling cars	Finger injured.
December 8	Mrs. C. P. Cottle	Passenger	Oakdale	Axle broke	Slight bruise.
December 11	R. Rimsburgh	Employé	Oakdale	Coupling cars	Chest slightly bruised.
December 13	Moody Bryant	Trespasser	Wheatland	Fell from car	Leg and hand injured.
December 13	Chinaman	Trespasser	Lodi	On track and struck by train	Severely bruised.
December 15	B. McAvery	Employé	Oakland	Handling dump cars	Slight bruises.
December 15	F. B. Burkhardt	Employé	Oakland	Handling dump cars	Slight bruises.
December 18	John Redman	Passenger	Oakland	Jumped off train	Slightly bruised.
December 20	A. Burnett	Employé	Summit	Rear collision	Severely injured.
December 27	A. L. Parnit	Employé	Oakland	Coupling cars	Finger severely injured.

TABLE A. FUNDED DEBT.

To include all bonds payable by the Company, except United States Government Bonds.

Character of—	Series.	Date.	Due.	In what money payable—Interest & Principal.	Interest. Rate.	Interest. Payable.	Authorized Amount.	Total Issued — December 31, 1881.	Accrued Interest —During year.	Amt of Bonds Outstanding December 31, 1881.
Convertible mortgage		Dec. 1, 1862	Jan. 1, 1883	Coin	7	Jan'y and July	$1,500,000	$1,500,000	$60,000	$342,000
California State Aid		July 1, 1864	July 1, 1884	Coin	7	Jan'y and July	1,500,000	1,500,000	Paid by State	1,500,000
Central Pacific, first mortgage	A	July 1, 1865	July 1, 1895	Coin	6	Jan'y and July	3,000,000	2,995,000	197,700	2,995,000
Central Pacific, first mortgage	B	July 1, 1866	July 1, 1896	Coin	6	Jan'y and July	1,000,000	1,000,000	60,000	1,000,000
Central Pacific, first mortgage	C	July 1, 1866	July 1, 1896	Coin	6	Jan'y and July	1,000,000	1,000,000	60,000	1,000,000
Central Pacific, first mortgage	D	July 1, 1866	July 1, 1896	Coin	6	Jan'y and July	1,390,000	1,383,000	82,980	1,383,000
Central Pacific, first mortgage	E	Jan. 1, 1867	Jan. 1, 1897	Coin	6	Jan'y and July	4,000,000	3,997,000	239,820	3,997,000
Central Pacific, first mortgage	F	Jan. 1, 1868	Jan. 1, 1898	Coin	6	Jan'y and July	4,000,000	3,999,000	239,940	3,999,000
Central Pacific, first mortgage	G	Jan. 1, 1868	Jan. 1, 1898	Coin	6	Jan'y and July	4,000,000	3,999,000	239,940	3,999,000
Central Pacific, first mortgage	H	Jan. 1, 1868	Jan. 1, 1898	Coin	6	Jan'y and July	4,000,000	3,999,000	239,940	3,999,000
Central Pacific, first mortgage	I	Jan. 1, 1868	Jan. 1, 1898	Coin	6	Jan'y and July	3,525,000	3,511,000	210,660	3,511,000
Western Pacific, old issue		Dec. 1, 1865	Dec. 1, 1895	Coin	6	June and Dec'r		112,000	6,720	112,000
Western Pacific, first mortgage	A	July 1, 1869	July 1, 1899	Coin	6	Jan'y and July	1,970,000	1,858,000	111,480	1,858,000
Western Pacific, first mortgage	B	July 1, 1869	July 1, 1899	Coin	6	Jan'y and July	765,000	765,000	45,900	765,000
California and Oregon	A	Jan. 1, 1868	Jan. 1, 1888	Coin	6	Jan'y and July	6,000,000	6,000,000	360,000	6,000,000
Central Pacific, California and Oregon division	B	Jan. 1, 1872	Jan. 1, 1892	Coin	6	Jan'y and July	7,200,000	2,080,000	124,800	2,080,000
San Francisco, Oakland, and Alameda		July 1, 1870	July 1, 1890	Coin	8	Jan'y and July	1,500,000	687,000	54,960	687,000
San Joaquin Valley		Oct. 1, 1870	Oct. 1, 1900	Coin	6	April and Octo'r	6,080,000	6,080,000	364,800	6,080,000
Land Grant		Oct. 1, 1870	Oct. 1, 1900	Coin	6	April and Octo'r	10,000,000	10,000,000	424,155	7,080,000
Income Bonds		May 1, 1878	May 1, 1888	Coin	8	May and Nov'r	6,000,000	3,285,000	262,800	3,285,000
Totals							$68,430,000	$59,750,000	$3,686,595	$55,672,000

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12. TABLE A. FUNDED DEBT—Continued.

Character of—	Bonds redeemed during year ending December 31, 1880.		
	Amount.	Cost.	Discount or Premium.
Land Grant Bonds	$200,000	$212,974	$12,974
Convertible Mortgage	1,158,000	1,158,000	
Totals	$1,358,000	$1,370,974	$12,974

UNITED STATES CURRENCY BONDS ISSUED TO THE CENTAL PACIFIC RAILROAD COMPANY.

Date Issued.	Int'r't Commences	Payments.	Bonds.		
			Amount.	Proceeds of Sale in Currency.	Premium.
1865.	1865.				
May 12	Jan. 16	$1,258,000	$27,855,680	$27,989,834 95	$134,274 95
Aug. 14	Aug. 14	384,000			
Oct. 16	Oct. 16	256,000			
Dec. 11	Nov. 29	464,000			
1866.	1866.				
Mar. 6	Mar. 6	640,000			
July 10	July 10	640,000			
Oct. 31	Oct. 29	320,000			
1867.	1867.				
Jan. 15	Jan. 14	640,000			
Oct. 25	Oct. 25	320,000			
Dec. 12	Dec. 11	1,152,000			
1868.	1868.				
June 10	June 9	946,000			
July 11	July 10	320,000			
Aug. 5	Aug. 4	640,000			
Aug. 14	Aug. 13	1,184,000			
Sept. 12	Sept. 11	1,280,000			
Sept. 20	Sept. 19	1,120,000			
Oct. 13	Oct. 12	1,280,000			
Oct. 28	Oct. 26	640,000			
Nov. 5	Nov. 3	640,000			
Nov. 12	Nov. 11	640,000			
Dec. 5	Dec. 5	640,000			
Dec. 7	Dec. 7	640,000			
Dec. 30	Dec. 29	640,000			
1869.	1869.				
Jan. 15	Jan. 13	640,000			
Jan. 29	Jan. 28	640,000			
Feb. 17	Feb. 17	640,000			
Mar. 2	Feb. 17	1,066,000			
Mar. 3	Mar. 2	1,333,000			
May 28	May 27	1,786,000			
July 15	May 27	1,314,000			
July 15	July 15	268,000			
Dec. 31	July 16	1,510,000			
1872.	1868.				
Jan. 2	Nov. 28	4,120			
		$25,885,120			
U. S. Six per cent Currency Bonds issued to the Western Pacific R. R. Co.					
1867.	1867.				
Jan. 24	Jan. 26	$320,000			
1869.	1869.				
Sept. 1	Sept. 3	320,000			
Oct. 29	Oct. 28	1,008,000			
1870.	1870.				
Jan. 27	Jan. 22	322,000			
1872.	1872.				
Jan. 8	Jan. 22	560			
		$1,970,560			

NOTE.—One hundred and twenty dollars unsold premium received was credited to the construction account.

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TABLE C.

Length in Miles of Road and Tracks (Single and Double), Owned by the Company.

State, separately, lengths within and without State. Reduced to single track by adding length of double track.			Length of Track, December 31, 1880.						
			Single.			Reduced to Single Track.			
						Sidings.	Track and Sidings.		
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron and Steel.	Iron.	Iron.	Steel.	Iron and Steel.
Main line without State	State line	Terminus	371.1652	227.2048	598.3700	63.8322	434.9974 (b)	227.2048 (c)	662.2022
Main line within State	Oakland Wharf	State line	39.9337	233.7732	273.7069	101.5893	141.5230	233.7732	375.2962
Oregon Branch	Roseville	Redding	140.7604	11.3405	11.3405	19.7016	160.4620	11.3405	171.2962
Visalia Branch	Lathrop	Goshen	111.1988	34.8808	34.8808	11.1204	122.3192	34.8808	157.2000
San José Branch	San José	Niles	12.3710	5.1653	5.1653	.9800	13.3510	5.1653	18.5163
Oakland Branch	Oakland Wharf	Brooklyn							
Alameda Branch	Oakland Point	Alameda Wharf		5.6598	5.6598	.0335	.0335	5.6598	5.6933
		Melrose, Fernsdale, Brooklyn	5.0724	5.9466	11.0190	.8647	5.9466	5.9466	11.8837
Total on whole road, December 31, 1880			680.5015	523.9710	1204.4725	198.1217	878.6232	523.9710	1402.5942

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1880.								
	Within State.			Without State.			Total.		
	Length in Miles.	Average weight per Mile (Tons).	Total weight (Tons).	Length in Miles.	Average weight per Mile (Tons).	Total weight (Tons).	Length in Miles.	Average weight per Mile.	Total weight.
Length of iron rail	887.2516			869.9948			1757.2464		
Length of steel rail	593.5324			454.4096			1047.9420		
Total length of iron rail replaced by steel rail during the year, renewal and repairs	8.7752			.3662			9.1414		
Of the iron rail, the length of rerolled iron was in construction	89.1862	40.0002	3567.4700	103.7686	47.1411	4891.7799	192.9548	43.8405	8459.2409

TABLE D.

Grants or Donations, in Bonds or Money, from States, Counties, Towns, Corporations or Individuals, not Repayable by Company.

Bonds.	Interest Payable.	Total Amount of Bonds or Cash	Disposed of.			Interest Accrued to Company.		Amount held by Company as an Investment.	Remarks.
Character of.	By Whom.		Amount of Bonds.	Cash Realized.	Discount.	Dec. 31, 1880.	During Year.		
San Francisco County Bonds*	San Francisco County	$400,000	$400,000	$321,752 75	$78,247 25	$27,865 00	None.	None.	The amount received from sale of these bonds, and the interest accrued to the company, has been credited to construction account.
San Francisco County Bonds†	San Francisco County	250,000	250,000	175,000 00	75,000 00				

*The above four hundred bonds were issued to the Central Pacific Railroad Company as a compromise of a claim of the company against the City and County of San Francisco, but were not a donation.

†The above two hundred and fifty bonds were issued to the Western Pacific Railroad Company under the same circumstances as the four hundred bonds were issued to the Central Pacific Railroad.

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TABLE E. OTHER AIDS OR GRANTS, FROM THE UNITED STATES, STATES, COUNTIES, CORPORATIONS, OR INDIVIDUALS.

Lands Granted by the United States Government.

To what Railroad Company.	Acres per Mile.	Number of Miles.	Number of Acres.			Estimated Value.	
			Total.	Less Reserved by Govern't.	Net Total.	Per Acre.	Total.
Central Pacific	12,800	742.00	1,500,000	7,997,600	----	$2 50	$19,994,000
Western Pacific*	12,800	123.38	1,153,264	426,000	----	2 50	1,065,000
California and Oregon	12,800	291.00	----	3,724,800	----	2 50	9,312,000
			----	12,148,400	----	----	$30,371,000

*The Western Pacific Railroad Company had disposed of its bonds prior to its consolidation with this company.

Lands or property, including right of way donated by States, counties, towns, corporations, or individuals, stating in detail the amount of land granted for right of way, for stations, for shops, for storehouses, etc.

By Whom Donated.	Description of Property.
Sacramento City	20 $\frac{6}{10}$ acres in the slough at Sacramento City.
Oakland Water Front Company	Land, Oakland water front.
State of California	Half interest in Mission bay lands, San Francisco.

NOTE.—No donations of lands or property other than is specified above in Tables D and E have ever been made to the company, except lands for "right of way," stations, shops, and storehouses, such as were procured by the contractors.

Bonds whereof principal is payable by company—Interest by State or other parties.

Character of.	Date When—		Amount.	Interest.	
	Issued.	Due.		Rate.	By Whom Payable.
Central Pacific	July 1, 1864	July 1, 1884	$1,500,000	7	State of California.

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TABLE F. SALES OF LANDS GRANTED BY UNITED STATES GOVERNMENT.

Total sales and accrued interest, in currency and coin.

	Acres Sold.	Average Price.	Amount.		
			Principal.	Interest Accrued.	Total.
Lands sold prior to December 31, 1880	774,241.33	$5 71 17/100	$4,412,203 82	$1,013,362 45	$5,425,566 27
Lands leased prior to December 31, 1880			625 00		625 00
Timber and stumpage prior to December 30, 1880			60,902 18		60,902 18
Total to December 31, 1880	774,241.33		$4,473,731 00	$1,013,362 45	$5,487,093 45
During the year	114,852.34	$2 99 17/100	$344,403 47	$169,838 01	$514,241 48

Amounts paid and due on sales above stated—currency and coin.

	Amount Due.			Amount Paid.		
	Principal.	Accrued Interest.	Total.	Principal.	Interest.	Total.
To December 31, 1880	$1,737,423 68	$117,241 39	$1,854,665 07	$2,674,780 14	$896,121 06	$3,570,901 20
During year	$224,742 72	$62,430 10	$287,172 82	$314,101 60	$107,423 91	$421,527 51

TABLE F—Continued.

Net cash receipts in coin, deducting discount on currency and expenses.

	Coin.		
	Currency and Coin.	Less Expenses—Discount on Currency.	Net Coin Receipts.
From lands previous to December 31, 1880, trust mortgage	$421,279 09		
Since trust mortgage	3,212,074 53	$925 24	$3,211,149 29
Total	$3,633,353 62	$925 24	$3,211,149 29

Application of amount placed in hands of Trustees for redemption of bonds (to be stated in coin).

	Bonds Redeemed.			Total Received by Trustees.	Balance on Hand.	Discount or Premium on Bonds Redeemed.
	Number.	Amount.	Cost.			
Total	2,920	$2,920,000 00	$2,785,404 36	$3,211,149 29	$425,744 93	$134,595 64

Cash from sales, previous to trust mortgage, not placed in hands of Trustees	$421,279 09
Total net receipts as above stated	3,211,149 29
Patents received to December 31, 1880—number of acres { Including patents to Western Pacific Railroad Company	2,478,647 93
Patents received to December 31, 1880—number of acres { Not including patents to Western Pacific Railroad Company	2,047,021 43
Number of purchasers to December 31, 1880, not including purchasers of Western Pacific Railroad lands	3,475
Average number of acres sold to each	222.80

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STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Leland Stanford, President of the Central Pacific Railroad Company, and E. H. Miller, Jr., Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

LELAND STANFORD.
E. H. MILLER, JR.

Subscribed and sworn to before me, this fourteenth day of February, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

COLUSA AND CHICO RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

John T. Davis, President	San Francisco.
B. B. Minor, Vice-President	San Francisco.
W. P. Minor, Treasurer	San Francisco.
Henry Dear, Secretary	San Francisco.

NAMES OF DIRECTORS:

John T. Davis	San Francisco.
B. B. Minor	San Francisco.
Henry Dear	San Francisco.
Robert Perrin	San Francisco.
W. P. Minor	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

Room 44, Nevada Block ---- San Francisco, California.

The Colusa and Chico Railroad Company was incorporated October 4, 1878.

CAPITAL STOCK.

1. Capital stock authorized by charter	$1,000,000 00
3. Capital stock issued [number of shares, 36]; amount paid in	3,600 00
5. Total amount paid in, as per books of the company	3,600 00
8. Par value of shares issued	100 00
9. Total number of stockholders	5
10. Number of stockholders in California	5
11. Amount of stock held in California	All.

COST OF ROAD, EQUIPMENT, AND PROPERTY.

Construction.

9. Engineering to December 31, 1880	$1,500 00

EXPENSES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

8. Engineering, agencies, salaries, and other expenses during construction	$1,500 00

DESCRIPTION OF ROAD.

2. Length of main line of road from Colusa to Chico	36 miles.
Length of main line in California	All.

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

J. T. Davis, President of the Colusa and Chico Railroad Company, and Henry Dear, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

JOHN T. DAVIS.
HENRY DEAR.

Subscribed and sworn to before me, this nineteenth day of January, 1881.

HOLLAND SMITH,
Notary Public.

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LOS ANGELES AND INDEPENDENCE RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Charles Crocker, President	San Francisco.
Charles F. Crocker, Vice-President	San Francisco.
Leland Stanford	San Francisco.
E. W. Hopkins	San Francisco.
F. S. Douty, Secretary	San Francisco.
C. P. Huntington	New York.

BUSINESS ADDRESS OF THE COMPANY:

Corner Fourth and Townsend Streets ..... San Francisco, California.

The Los Angeles and Independence Railroad Company was incorporated January 4, 1875.

CAPITAL STOCK.

1. Capital stock authorized by charter	$4,000,000 00
2. Capital stock authorized by votes of company	4,000,000 00
3. Capital stock issued [number of shares, 5,025]: amount paid in	502,500 00
5. Total amount paid in as per books of the company	502,500 00
8. Par value of shares issued	100 00
9. Total number of stockholders	9
10. Number of stockholders in California	8
11. Amount of stock held in California	502,000 00

DEBT.

17. Securities and debt balances	$10,166 71

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry 2. Bridging	$361,124 96
3. Superstructure, including rails	6,032 00
4. Land damages	1,305 37
9. Wharves	55,656 07
11. Total cost of construction	$424,118 40

Equipment.

	No.	Cost.
12. Locomotives	2	
16. Passenger cars	3	
Baggage car and smoker combined	1	$86,203 05
17. Freight cars	78	
Track cars	10	
18. Total for equipment		$86,203 05

PROPERTY PURCHASED AND ON HAND, NOT INCLUDED IN FOREGOING ACCOUNT.

27. Whole amount of permanent investments	$510,321 45
28. Property in California	510,321 45
30. Cash and cash assets	10,166 71
31. Total property and assets of the company	520,048 16

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

4. Fences	$15 17
20. Net addition to property account for the year	15 17

REVENUE FOR THE YEAR.

13. Derived from rents for use of road and equipment when leased: Rental from January 1 to December 31, 1880, inclusive	$24,629 00
19. Total income derived from all sources	24,629 00

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.*

Class I—General traffic expenses.

1. Taxes—State and local	$2,540 18
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	10 50
5. Total	2,550 68

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$22,063 15
2. Percentage of same to capital stock and net debt	.04.39
3. Percentage of same to total property and assets	.04.23
5. Dividend No. 1 declared (twelve per cent) for the years 1877–78–79–80, being accumulated amount net earnings for those years	60,300 00
7. Balance for the year	38,236 85
9. Surplus at commencement of the year	48,403 56
10. Total surplus December 31, 1881	10,166 71

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$424,118 40
Cost of equipment	86,203 05
Balance of current accounts	10,166 71
Total	$520,488 16

Credits.

Capital stock	$502,500 00
Profit and loss (profit)	17,988 16
Total	$520,488 16

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Balance December 31, 1879		$56,209 84
Rental, 1880		24,629 00
General expense	$10 50	
Taxes	2,540 18	
Dividends	60,300 00	
Balance to 1881	17,988 16	
	$80,838 84	$80,838 84
By balance January 1, 1881		17,988 16

*Leased and operated by C. P. R. R. Company.

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DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Santa Monica to Los Angeles	December, 1875.
2. Length of main line of road from Santa Monica to Los Angeles	16.83 miles.
Length of main line in California	16.83 miles.
3. Length of line with track laid, if road is not completed	Completed.
10. Total length of road belonging to this company	16.83 miles.
11. Aggregate length of siding and other tracks not enumerated above	1.5433 miles.
12. Same in California	1.5433 miles.
13. Aggregate length of track belonging to this company computed as single track	18.3733 miles.
14. Same in California	18.3733 miles.
18. Number of wooden bridges (aggregate length, 1,431 feet,) in California	7
19. Number of crossings of highways at grade, in California	11
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	11
27. Number of railroad crossings at grade:	
Street railroad at Park Station	1

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	2		
Average weight of engines in working order		60,000	
Maximum weight of engines in working order		60,000	
2. Tenders	2		
Average weight of tenders full of fuel and water		250,000	
Maximum weight of tenders full of fuel and water		30,000	
Average joint weight of engines and tenders		85,000	
3. Length of heaviest engine and tender from center of forward truck wheel of engine to center of rear wheel of tender—$41\frac{6}{12}$ feet.			
4. Total length of heaviest engine and tender over all—$49\frac{6}{12}$ feet.			
6. Passenger cars	3		
Average weight		37,250	
Maximum weight		37,250	
7. Mail and baggage cars	1	36,000	
8. Eight-wheel box freight cars	16	19,000	
10. Eight-wheel platform cars	62	15,000	
12. Other cars, track cars	10		
13. Total market value—(cost)			$86,203 05

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	78
15. Number of locomotives equipped with train brakes (Vacuum brake)	2
16. Number of cars equipped with train brakes (Vacuum brake)	4

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1880.								
			Single.	Reduced to Single Track.							
				Length of Roadway—Single and Double Track.		Track.	Sidings.	Track and Sidings.			
	From—	To—	Iron.	Iron and Steel.	Iron.	Iron.	Iron.	Iron and Steel.			
Main Line and Branches.	Santa Monica.	Los Angeles.	16.83	16.83	16.83	1.5433	(b) 18.3733	18.3733			
Main line within State.			16.83	16.83	16.83						
Total on whole road December 31, 1880			16.83								

The length of rail is double the length of single track, column (b).	December 31, 1880.		
	Within the State.		
	Length in Miles.	Average weight per Mile.	Total weight (Tons.)
Length of iron rails	36.7466	39.2857	1443.6159

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STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Charles Crocker, President of the Los Angeles and Independence Railroad Company, and F. S. Douty, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing twenty-six sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

CHARLES CROCKER.
F. S. DOUTY.

Subscribed and sworn to before me, this ninth (9th) day of February, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

LOS ANGELES AND SAN DIEGO RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Charles F. Crocker, President	San Francisco.
N. T. Smith, Treasurer	San Francisco.
J. L. Willcutt, Secretary	Oakland.
George E. Gray, Chief Engineer	San Francisco.
A. N. Towne, Superintendent	San Francisco.
Leland Stanford	San Francisco.
E. H. Miller	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

Los Angeles and San Diego Railroad Company ..... San Francisco, California.

The Los Angeles and San Diego Railroad Company was incorporated October 10, 1876.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$5,600,000 00
3.	Capital stock issued [number of shares 5,780]; amount paid in	570,800 00
5.	Total amount paid in as per books of the company	570,800 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders 7	
10.	Number of stockholders in California 6	
11.	Amount of stock held in California	569,800 00

DEBT.

12.	Funded debt as follows:	
	Bonds	$556,000 00
13.	Total amount of funded debt	$556,000 00
16.	Total gross debt liabilities	$556,000 00
17.	Other securities and debt balances	$19,421 95
18.	Total net debt liabilities	$536,578 05

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1.	Grading and masonry	
2.	Bridging	
3.	Superstructure, including rails	$1,096,869 25
4.	Land	
	Land damages	
	Fences	
5.	Passenger and freight stations, and water stations	14,930 77
6.	Engine houses, and car sheds, (turn-tables included in track)	1,000 00

PROPERTY PURCHASED, ETC.

27.	Whole amount of permanent investments	$1,112,800 00
28.	Property in California	1,112,800 00
30.	Cash and cash assets	19,421 95
31.	Total property and assets of the company	1,132,221 95

32. SINKING AND CONTINGENT FUNDS.

Showing amount of same, and their purpose.

Applicable to Redemption of what Bonds. Character.	Terms and Conditions of Funds.
First mortgage	Sinking Fund, $12,000 yearly, to commence year 1900.

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1.	Grading and masonry	
2.	Bridging	
3.	Superstructure, including rails	$1,090,434 30
4.	Land and land damages	
	Fences	
5.	Passenger and freight stations and water stations	14,930 77
6.	Engine houses and car sheds (turn-tables included in track)	1,000 00
	Total	$1,106,365 07
20.	Net addition to property account for the year	$1,106,365 07

REVENUE FOR THE YEAR.

Operated by the Central Pacific Railroad Company, and included in its report.

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Operated by the Central Pacific Railroad Company, and included in its report.

NET INCOME, DIVIDENDS, ETC.

1.	Total net income	$2,421 95
10.	Total surplus December 31, 1880	5,421 95

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$1,112,800 00
Cash, cash assets, and other items (specifying same): Current accounts	19,421 95
Total	$1,132,221 95

Credits.

Capital stock	$570,800 00
Funded debt	556,000 00
Profit and loss (profit)	5,421 95
Total	$1,132,221 95

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PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
To general expenses	$142 05	
To balance	5,421 95	
By road earnings		$5,564 00
	$5,564 00	$5,564 00
By balance brought down		$5,421 95

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Florence to Nietos	April 15, 1874.
From Nietos to Anaheim	Jan'y 14, 1875.
From Anaheim to Santa Ana	Dec. 17, 1877.
2. Length of main line of road from Florence to Santa Ana	27.82 miles.
Length of main line in California	27.82 miles.
10. Total length of road belonging to this company	27.82 miles.
11. Aggregate length of siding and other tracks not enumerated above	2.39 miles.
12. Same in California	2.39 miles.
13. Aggregate length of track belonging to this company computed as single track	30.21 miles.
14. Same in California	30.21 miles.
19. Number of crossings of highways at grade, outside State	37

ROADS BELONGING TO OTHER COMPANIES, ETC.

37. Number of stations on all roads owned by this company	7
38. Same in California	7
40. Miles of telegraph owned by this company	27.82
41. Number of telegraph offices in company stations	4
43. Number of telegraph stations operated jointly by railroad and telegraph companies	4

TABLE A. FUNDED DEBT.

To include all bonds payable by the Company, except United States Government Bonds.

Character of—	Date.	Due.	In what Money Payable.		Interest.		Authorized Amount.	Total Issued.	Amount of Bonds Outstanding December 31, 1880.
			Interest.	Principal.	Rate.	Payable.		Dec. 31, 1880.	
First Mortgage.	July 1, 1880.	July 1, 1910.	Gold.	Gold.	7 per cent.	Jan. and July.	$2,800,000	$556,000	$556,000

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1880.				Reduced to Single Track.				December 31, 1880—Within State.		
			Single.	Length of Roadway—Single and Double Track.			Track.	Sidings.		Track and Sidings.	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
	From—	To—	Iron.	Iron.	Iron and Steel.		Iron.	Iron.		Iron.			
Main Line and Branches													
Main Line within State	Florence	Santa Ana	27.82	27.82	27.82		27.82	2.39		(b) 30.21			
Total on whole road, December 31, 1880			27.82	27.82	27.82		27.82	2.39		30.21			
The length of rail is double the length of single track, column (b) above.													
Length of iron rail											60.42	44	2,658.48

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Charles F. Crocker, President of the Los Angeles and San Diego Railroad Company, and J. L. Willcutt, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of the said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

CHARLES F. CROCKER.
J. L. WILLCUTT.

Subscribed and sworn to before me, this twenty-fifth day of April, 1881.

CHAS. J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

NORTHERN RAILWAY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

W. V. Huntington, President	San Francisco.
C. P. Huntington, Vice-President	New York.
Leland Stanford, Treasurer	San Francisco.
Charles Crocker	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The Northern Railway Company was incorporated July 19, 1871.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$8,400,000 00
2.	Capital stock authorized by votes of company	8,400,000 00
3.	Capital stock issued [number of shares, 47,105]; amount paid in	4,710,500 00
5.	Total amount paid in as per books of the company	4,710,500 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders 19	
10.	Number of stockholders in California 18	
11.	Amount of stock held in California	4,643,000 00

DEBT.

12.	Funded debt as follows:		
	Bonds		$3,148,000 00
	Interest paid on same during year	$188,880	
13.	Total amount of funded debt		$3,148,000 00
14.	Unfunded debt:		
	All other debts, current credit balances, etc.		$94,140 00
15.	Total amount of unfunded debt		$94,440 00
16.	Total gross debt liabilities		$3,242,440 00
	Other securities and debt balances		$322,971 01
18.	Total net debt liabilities		$2,919,468 99

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROADS AND BRANCHES.

Construction.

11.	Total cost of construction (not segregated)	$8,415,705 24

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Equipment.

17. Hand cars	$2,589 70
18. Total for equipment	2,589 70
27. Whole amount of permanent investments	8,418,294 94
29. Amount of supplies and materials on hand	322,971 01
31. Total property and assets of the company	8,741,265 95

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

4. Fences	$1,074 69
5. Passenger and freight stations	12,071 01
Woodsheds and water stations	7,811 70
6. Engine houses, car sheds, and turn-tables, and section and tool houses	8,756 17
8. Engineering agencies, salaries, and other expenses during construction	389 02
Additional side tracks	18,070 72
Additions to wharves, ferry-slips, and improvements at Port Costa and Benicia	91,537 09
New telegraph wire	906 62
18. Total	$140,617 02
19. Land at Williams for warehouses	275 00
20. Net addition to property account for the year	140,342 02

REVENUE FOR THE YEAR.

13. Derived from rents for use of road and equipment when leased	$570,000 00
19. Total income derived from all sources	$570,000 00

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$4,046 32
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	$2,888 86
5. Total	$4,935 18
9. Total expenses of operating the road, embraced in Classes I, II, III, and IV	$ 4,935 18
12. Amount paid other companies as rent for use of road, specifying each company, the amount and basis on which rent is computed: San Pablo and Tulare Railroad Company, $300 per mile per month	167,464 80
13. Total expenses	$172,399 98

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$397,600 02
2. Percentage of same to capital stock and net debt	.05
3. Percentage of same to total property and assets	.04 5/10
4. Interest accrued during the year on funded debt	188,880 01
7. Balance for the year, or surplus	208,720 02
9. Surplus at commencement of the year	579,605 93
10. Total surplus, December 31, 1880	788,325 95

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$8,415,705 24
Cost of equipment—hand cars	2,589 70
Cash, cash assets, and current balances	322,971 01
Total	$8,741,265 95

Credits.

Capital stock	$4,710,500 00
Funded debt	3,148,000 00
Other debts: coupons due	94,440 00
Profit	788,325 95
Total	$8,741,265 95

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Rental		$570,000 00
Expenses	$2,888 86	
Taxes	2,046 32	
Interest	188,880 00	
Leased roads	167,464 80	
Balance, profit	202,720 02	
	$570,000 00	$570,000 00

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From West Oakland to Shell Mound	August 16, 1876.
From Shell Mound to Martinez	January 9, 1878.
From Woodland to Williams	July 1, 1876.
From Williams to Willows	October 3, 1878.
From Benicia to Suisun	December 28, 1879.
Leased Roads: San Pablo and Tulare Railroad Company:	
From Martinez to Tracy	September 8, 1878.
3. Length of line with track laid, if road is not completed	112.1628 miles.
4. Length of double track on main line	4.6812 miles.
6. Total length of branches owned by the company	116.8440 miles.
7. Total length of branches owned by the company in California	22.4062 miles.
8. Total length of branches owned by the company in other States	Same.
9. Length of double track on branches	139.2502 miles.
10. Total length of road belonging to this company	Same.
15. Total lengths of steel rail in tracks belonging to this company, not including steel top rail; (weight per yard, fifty pounds)	182.4532 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	7
18. Number of wooden bridges (aggregate length, 13,151 feet,) in California	170
19. Number of crossings of highways at grade, in California	79
20. Number of crossings of highways over railroad, in California	2
22. Number of highway bridges eighteen feet above track, in California	2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	79
27. Number of railroad crossings at grade—three: Tramway at Pinole (gauge, three feet five inches), tramway at Martinez, local track Central Pacific Railroad at Oakland Point.	

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ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY UNDER LEASE OR CONTRACT.

30. *Names, Description, and Length of Each.*

Name of Company.	Termini.		Length Miles.	Dates of Lease.		Amount of Rental.
	From—	To—		From—	To—	
San Pablo & Tulare R. R.	Martinez	Tracy	46.518	Sept. 2, 1878	Sept. 2, 1888	$300 per mile per month.

37. Number of stations on all roads owned by this company 36
40. Miles of telegraph owned by this company 113
41. Number of telegraph offices in company stations 16

12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of	Date	Due	In what Money Payable.		Interest.		Authorized Amount
			Interest	Principal	Rate	Payable	
1st Mortgage.	Jan. 1, 1877.	Jan. 1, 1907.	Gold.	Gold.	6	Jan. & July.	$6,300,000

TABLE A—Continued.

Total issued to December 31, 1880.	Accrued interest during year.	Amount of Bonds outstanding December 31, 1880.
$3,148,000	$188,880	$3,148,000

TABLE A—Continued.

Character of—	Bonds Sold During the Year Ending December 31, 1880.	
	Amount of Bonds.	Amount Realized.
First mortgage	$148,000	$148,000

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

Length of Track, December 31, 1880.

State, separately, lengths within and without State. Reduced to single track by adding length of double track.			Single.		Double.	Length of Roadway—Single and Double Track.			Reduced to Single Track.					
									Track.		Sidings.	Track and Sidings.		
Main Line and Branches.	From—	To—	Iron.	Steel.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Iron.	Steel.	Iron and Steel.
Main line within State	Oakland	Martinez		26.3419			35.7043	35.7043		35.7043	11.7423	(b) 11.7423	(c) 35.7043	47.4466
	Benicia	Suisun		16.3428			16.3428	16.3428		16.3428	4.1652	4.1652	16.3428	20.5080
	Woodland	Willows	25.6174	39.1795		25.6174	39.1795	64.7969	25.6174	39.1795	6.4987	32.1161	30.1795	71.2956
Total on whole road, December 31, 1880			25.6174	81.8642	4.6812	25.6174	91.2266	116.8440	25.6174	91.2266	22.4062	48.0236	91.2266	139.2502
Total constructed during year											2.2281	2.2281		2.2281

The length of rail is double the length of single track, columns (b) and (c) above.

	December 31, 1880—Within the State.			December 31, 1880—Within the State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons.)	Length in Miles.	Average Weight per Mile.	Total Weight (Tons.)
Length of iron rails	96.0472	44.0000	4226.0768	4.4562	44.0000	196.0728
Length of steel rails	182.4532	39.2857	7167.8016			

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

W. V. Huntington, President of the Northern Railway Company, and Jas. O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

W. V. HUNTINGTON.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth (15) day of February, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

PITTSBURG RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Levi Stevens, President ..... Fruit Vale, Alameda County, Cal.
Judah Baker, Vice-President ..... San Francisco, Cal.
Samuel Baker, Secretary ..... East Oakland, Cal.
Charles J. Morrill ..... Boston, Mass.
Alfred W. Fish ..... Providence, R. I.
Stevens, Baker & Co., Treasurers ..... San Francisco, Cal.

BUSINESS ADDRESS OF THE COMPANY:

Pittsburg Railroad Co., 202 Sacramento Street ..... San Francisco, California.

The Pittsburg Railroad Company was incorporated January 23, 1862.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$50,000 00
2.	Capital stock authorized by votes of company	225,000 00
3.	Capital stock issued [number of shares, 2,250]; amount paid in	225,000 00
5.	Total amount paid in as per books of the company	225,000 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders	54
10.	Number of stockholders in California	3
11.	Amount of stock held in California	320 shares.

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1.	Grading and masonry (estimated)	$35,000 00
2.	Bridging (estimated)	27,000 00
3.	Superstructure, including rails (estimated)	51,000 00
4.	Land	400 00
	Land damages	465 26
	Fences (estimated)	550 00
6.	Engine houses, car sheds, and turn-tables } estimated	7,550 00
7.	Machine shops, including machinery and tools, }	
	Agencies, salaries, and other expenses during construction	59.047 00
	Offices and other buildings (estimated)	1,500 00
	Wharves	5,903 00
11.	Total cost of construction	$188,865 26

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Equipment.

	No.	Cost.
12. Locomotives	2	$24,000 00
16. Passenger cars	1	500 00
17. Freight cars—platform cars, 3, $1,200; dump cars, 32, $19,200	35	20,400 00
Other cars—hand cars, 2, $400; water car, 1, $500	3	900 00
Cars destroyed, etc., and sundry materials		17,503 00
18. Total for equipment		$63,303 97

25. OTHER PROPERTY PURCHASED.

27. Whole amount of permanent investments	$251,669 23
28. Property in California	All.
30. Cash and cash assets	9,666 42
31. Total property and assets of the company	$261,335 65

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$154 15
2. Derived from passengers from other roads, over road operated by this company	461 75
7. Total earnings from passenger department	$615 90
8. Derived from local freight on roads operated by this company	$20,918 37
11. Derived from other sources belonging to freight department	3,499 49
12. Total earnings from freight department	$24,417 86
14. Total transportation earnings	$25,033 76
15. Earnings per mile of road operated	4,693 83
19. Total income derived from all sources	$25,033 76

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$398 15
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
Superintendent and Secretary	2,525 00
Legal expenses	25 00
3. Insurance premiums and losses by fire, and damages for fires set by engines	55 00
5. Total	$3,003 15
6. Proportion belonging to passenger department	$73 80
7. Proportion belonging to freight department	2,929 35

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$3,162 89
2. Iron rails laid, deducting old rails taken up. (Number of miles, 1,200 feet; weight per yard, 56 pounds) repairing old rails	705 75
4. New ties (No. 250); cost	62 90
14. Fuel for engines and cars: Number of tons of coal, 153¾; cost	615 00
17. Oil and waste	83 10
18. Switchmen, watchmen, flag, and signalmen	720 00
19. Total	$5,349 64
20. Proportion of same to passenger department	$117 50
21. Proportion of same to freight department	5,232 14

Class IV—Freight traffic expenses.

1. Repairs of freight, dump, and work cars	No separate record.
4. Salaries, wages, and incidentals of freight trains and stations	$14,570 91
5. Salaries, wages, and incidentals of freight stations	Included in No. 4.
8. Total	$14,570 91
9. Total expenses of operating the road embraced in Classes I, II, III, and IV	$22,923 70
11. Percentage of expenses to total transportation earnings .916	

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$2,110 06
2. Percentage of same to capital stock .0093 1/10	
3. Percentage of same to total property and assets .0093 1/10	
6. Date of last dividend declared	November 6, 1876.
7. Balance for the year, or surplus	$9,666 42
9. Surplus at commencement of the year	6,591 51
10. Total surplus December 31, 1881	9,666 42

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from passenger dep't, as per "Revenue for the Year" No. 7	$615 90
2. Per passenger train mile	No record.
3. Expenses, proportion of "General Traffic Expenses" as per Class I, No. 6	$73 80
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	117 50
5. Expenses, "Passenger Traffic," as per Class III, No. 8	No separate record.
6. Total expenses	No separate record.
7. Per passenger train mile	No separate record.
8. Net earnings	No separate record.
9. Per passenger train mile	No separate record.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year," No. 12	$24,417 86
2. Per freight train mile	No record.
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	$2,929 35
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as Per Class II, No. 21	5,232 14
5. Expenses, "Freight Traffic," as per Class IV, No. 8	14,570 91
6. Total expenses, including passenger trains	22,923 70
7. Per freight train mile	No record.
8. Net earnings, freight and passengers	2,110 06
9. Per freight train mile	No record.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$188,365 26
Cost of equipment	63,303 97
Cash, cash assets, and other items	9,666 42
Total	$261,335 65

Credits.

Capital stock	$225,000 00
Profit and loss (profit)	36,335 65
Total	$261,335 65

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PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
By earnings		$25,033 76
By sale of old rails		964 85
To expenses	$22,923 70	
To balance	3,074 91	
	$25,998 61	$25,998 61

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Pittsburg Landing to Somersville	March, 1866.
2. Length of main line of road from Pittsburg to Somersville	5¼ miles.
Length of main line in California	5¼ miles.
3. Length of line with track laid (road is completed)	5¼ miles.
10. Total length of road belonging to this company	5¼ miles.
11. Aggregate length of siding and other tracks not enumerated above	2,800 feet.
12. Same in California	5,280
18. Number of wooden bridges (aggregate length, 2,000 feet,) in California	2
19. Number of crossings of highways at grade, in California	2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	2
28. Number of railroad crossings over other roads:	
Over Southern Pacific and Tulare R. R.	1

ROADS BELONGING TO OTHER COMPANIES, ETC.

34. Total miles of road operated by this company	5¼ miles.
35. Total miles of road operated by this company in California	5¼ miles.
36. Number of stations on all roads operated by this company	2
37. Number of stations on all roads owned by this company	2
38. Same in California	2

ROLLING STOCK.

	Number.	Average Weight.
1. Locomotives	2	
Average weight of engines in working order		18 tons.
Maximum weight of engines in working order		18 tons.
2. Tenders and engines are united as one		
Average joint weight of engines and tenders		18 tons.
4. Total length of heaviest engine and tender over all [17½ feet]		
6. Passenger cars	1	
11. Four-wheel platform cars	3	
12. Other cars	3	
Coal and gravel	32	

14. Total number of freight cars, including coal, etc., on a basis of eight wheels 19

MILEAGE, TRAFFIC, ETC.

3. Rate of speed of accommodation trains, including stops	12 miles.
5. Rate of speed of express freight trains, including stops	12 miles.
6. Rate of speed of accommodation freight trains, including stops	12 miles.
9. Total number of passengers carried	1,249
Number of through passengers going north	653
Number of through passengers going south	596
12. Number of tons freight carried (not including gravel)	51,656
Number of tons freight in this State, carried	51,656
Number of tons freight produced in this State, carried	51,017
13. Total freight mileage, or tons carried one mile	275,498¾

15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	10 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	10 cents.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	10 cents.
18. Average rate of fare per mile received from passengers to and from other roads	10 cents.
20. Average rate of fare per mile for all passengers	10 cents.
21. Highest rate of freight per ton per mile for any distance	15 cents.
22. Lowest rate of freight per ton per mile for any distance	7½ cents.
23. Average rate of local freight per ton per mile on roads operated by this company	8½ cents.
25. Average rate of freight per ton per mile for all	8½ cents.
Average rate of freight per ton per mile, products of this State	8½ cents.
Average rate of freight per ton per mile, products of other States	8½ cents.
26. Average number of cars in passenger trains (including baggage cars)	1
27. Average number of cars in freight trains—basis of eight-wheel	6
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	20 tons.
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	84,000 pounds.
30. Number of persons regularly employed by company, including officers	22
Average monthly pay of employés, other than officers	$88 20
Average monthly pay of engine drivers	125 00
Average monthly pay of passenger conductors	80 00
Average monthly pay of freight conductors	80 00
Average monthly pay of brakemen, flagmen, and switchmen	66 30
Average monthly pay of section men	48 20
Average monthly pay of mechanics in shops	101 60
Average monthly pay of laborers	48 20

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track Dec. 31, 1880.	
			Single.	Sidings.
Main Line and Branches.	From—	To—	Iron. Miles.	Iron. Feet.
Main line within State	Pittsburg Landing	Somersville	5¼	2,800
Total on whole road, December 31, 1880			5¼	

	December 31, 1880.		
	Within the State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rail	11.3840	35.800	414.1490

Total length of iron rail laid during the year 1,200 feet.

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STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Samuel Baker, Secretary of the Pittsburg Railroad Company, being duly sworn, deposes and says that the statements, tables, and answers contained in the foregoing sheets have been compiled and prepared by the proper officers of said company, from its books and records, under his direction and supervision; that he, the deponent, has carefully examined the same, and that as now furnished by him to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of his knowledge, and, as he verily believes, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

SAM'L BAKER, Secretary.

Subscribed and sworn to before me, this ninth day of May, 1881.

JAMES MASON,
Notary Public.

PLACERVILLE AND SACRAMENTO VALLEY RAILROAD COMPANY.

FOR THE YEAR ENDING DECEMBER 31, 1880.

To the Board of Railroad Commissioners:

This company practically has no existence. The road formerly under its control is merged in that now operated by the Sacramento and Placerville Railroad Company.

W. R. ANDRUS,
Secretary Railroad Commissioners.

SACRAMENTO AND PLACERVILLE RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
C. P. Huntington, Vice-President	New York.
Geo. Crocker, Treasurer	San Francisco.
Charles F. Crocker	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The Sacramento and Placerville Railroad Company was incorporated and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

Names of Railroad Companies.	Dates of Incorporation.
Sacramento Valley Railroad Company	August 14, 1852
Folsom and Placerville Railroad Company	September 29, 1876

CAPITAL STOCK.

1. Capital stock authorized by charter	$2,000,000 00
2. Capital stock authorized by votes of company	2,000,000 00
3. Capital stock issued [number of shares, 16,462]; amount paid in	1,646,200 00
4. Capital stock paid in on shares not issued [number of shares, 1,098]	109,800 00
5. Total amount paid in, as per books of the company	1,756,000 00
8. Par value of shares issued	100 00
9. Total number of stockholders	19
10. Number of stockholders in California	17
11. Amount of stock held in California	1,226,000 00

DEBT.

12. Funded debt as follows:	
Bonds	$1,100,000 00
Interest on same during year	82,000 00
13. Total amount of funded debt	1,100,000 00
All other debts, current credit balances, etc.	241,346 50
15. Total amount of unfunded debt	241,346 50
Other securities and debt balances	183,240 37
18. Total net debt liabilities	1,158,106 23

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Total cost of construction (not segregated)	$1,529,071 27
Equipment (cost included in the above):	
Locomotives	3
Passenger cars	1
Mail, baggage, and smoking cars combined	2
Freight cars	65
Other cars (track cars)	15
Investments in transportation lines:	
Old road of Placerville and Sacramento Valley Railroad Company	$1,520,000 00
26. Total for property purchased, etc.	$1,520,000 00
27. Whole amount of permanent investments	1,529,071 27
30. Cash and cash assets	183,240 27
31. Total property and assets of the company	$3,232,311 54
Expenditures charged to property account during the year	$303 05

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$37,749 00
5. Derived from express and extra baggage	1,800 00
6. Derived from mails	2,448 00
7. Total earnings from passenger department	$41,997 00
8. Derived from local freight on roads operated by this company	$79,314 45
12. Total earnings from freight department	$79,314 45
14. Total transportation earnings	$121,311 45
15. Earnings per mile of road operated	$2.542
16. Earnings per train mile (total passenger and freight)	2.67½
17. Rent of track for use of Central Pacific Railroad trains, between Brighton and Sacramento, $600 per month	7,200 00
Rents from tenants at depots	680 00
Miscellaneous earnings	2,809 00
19. Total income derived from all sources	$132,000 45

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$825 98
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	6,399 82
5. Total	$7,225 80
6. Proportion belonging to passenger department	$2,492 90
7. Proportion belonging to freight department	4,732 90

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$18,015 33
4. New ties. (Number 9,400); cost	3,322 00
5. Repairs of bridges	641 82
6. Repairs of buildings and fixtures (stations and turn-tables)	201 74
9. Removing ice and snow, repairs of wharves	25 00

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10. Repairs of locomotives		1,453 94
12. Locomotive service, wages and oils		6,934 36
14. Fuel for engines and cars:		
Number of cords of wood, 1,732; cost		7,532 00
15. Water and water stations		746 00
19. Total		$38,872 19
20. Proportion of same to passenger department		$13,410 90
21. Proportion of same to freight department		25,461 29

Class III—Traffic expenses.

1. Repairs of passenger, mail, baggage, and freight cars		$2,826 63
3. Damages and gratuities, passengers		145 00
4. Salaries, wages, and incidentals of mixed trains		7,179 80
5. Salaries, wages, and incidentals of stations		14,345 34
Total		$24,496 77
Divided as follows:		
Passenger department		$8,451 38
Freight department		16,035 39
7. Amount paid other roads for balance of mileage of passenger cars: All trains run on the road are mixed passenger and freight. It is impossible to segregate the expenses to show relative cost.		

Class IV—Freight traffic expenses.

3. Damages and gratuities, freight		$89 27
7. Amount paid other roads for balance of mileage of freight cars		1,038 00
8. Total		$1,127 27
9. Total expenses of operating the road embraced in Classes I, II, III, and IV		$71,722 03
10. Per train mile (total passenger and freight)	$1.58	
11. Percentage of expenses to total transportation earnings	59 per cent.	
13. Total expenses		$71,722 03

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$60,278 42
2. Percentage of same to capital stock and net debt	.02	
3. Percentage of same to total property and assets	.01 9/10	
4. Interest accrued during the year:		
On funded debt		82,000 00
7. Balance for the year, or deficit		21,721 58
8. Surplus at the commencement of the year	$156,690 70	
Deduct entries made in profit and loss account during the year, not included in the foregoing statement	4 08	
9. Surplus at the commencement of the year, as changed by aforesaid entries		156,686 62
10. Total surplus, December 31, 1880		$134,965 04

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from passenger department, as per "Revenue for the Year," No. 7	$41,997 00
2. Per passenger train mile	92½
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	2,492 90
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	13,410 90
5. Expenses, proportion "Passenger Traffic," as per Class III, No. 8	8,451 38
6. Total expenses	24,355 18
7. Per passenger train mile	53½
8. Net earnings	17,641 82
9. Per passenger train mile	39

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year," No. 12	$79,314 45
2. Per freight train mile	1 75
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	4,732 90
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 21	25,461 29
5. Expenses, "Freight Traffic," as per Class IV, No. 8, and Class III, No. 8	17,172 66
6. Total expenses	47,366 85
7. Per freight train mile	1 04½
8. Net earnings	31,947 60
9. Per freight train mile	70½

NOTE.—As all the trains run are mixed, it is impossible to get the actual cost of hauling passengers and freight separately. The cost of hauling and handling freight must be very much larger than these averages, and the passenger service must be less expensive than here shown, as the passenger cars which earn the amounts shown are attached to freight trains.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$3,049,071 27
Balance due the company	183,402 27
Total	$3,232,311 54

Credits.

Capital stock	$1,756,000 00
Funded debt	1,100,000 00
Other debts: Coupons not presented	241,000 00
Balance due the company	346 50
Profit and loss	134,965 04
Total	$3,232,311 54

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Freight earnings		$79,314 45
Passenger earnings		37,749 00
Express earnings		1,800 00
Mail earnings		2,448 00
Rental earnings		7,880 00
Miscellaneous earnings		2,809 00
Interest	$82,000 00	
Operating expenses	69,502 60	
General expenses	1,393 45	
Taxes	825 98	
Balance loss		21,721 58
Totals	$153,722 03	$153,722 03

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Sacramento to Folsom	February 22, 1856
From Folsom to Shingle Springs	June 20, 1865
2. Length of main line of road	Not completed.
Length of main line in California, Sacramento to Shingle Springs	47.71 miles.
10. Total length of road belonging to this company	47.71 miles.
11. Aggregate length of siding and other tracks not enumerated above	6.81 miles.
12. Same in California	6.81 miles.
13. Aggregate length of track belonging to this company computed as single track	54.52 miles.
14. Same in California	54.52 miles.

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15. Total length of steel rail in tracks belonging to this company, not including steel top rail; (weight per yard, 50 pounds)	5 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	1
18. Number of wooden bridges in California	12
19. Number of crossings of highways at grade, in California	32
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	32
27. Number of railroad crossings at grade:	
Central Pacific R. R. Company at Brighton	1
34. Total miles of road operated by this company	47.71 miles.
35. Total miles of road operated by this company in California	47.71 miles.
36. Number of stations on all roads operated by this company	16
37. Number of stations on all roads owned by this company	16
38. Same in California	16
39. Miles of telegraph on line of road operated by this company	48 miles.
41. Number of telegraph offices in company stations	4
42. Number of telegraph stations operated by this company	4
43. Number of telegraph stations operated jointly by railroad and telegraph companies	3

ROLLING STOCK.

	Number.	Average Weight.	Market Value—estimated.
1. Locomotives	3		$25,000 00
Average weight of engines in working order		56,933	
Maximum weight of engines in working order—60,200 pounds			
2. Tenders	3		
Average weight of tenders full of fuel and water		36,833	
Maximum weight of tenders full of fuel and water—40,000 pounds			
Average joint weight of engines and tenders		93,766	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender—41 feet 2½ inches			
4. Total length of heaviest engine and tender over all—49 feet 6 inches			
6. Passenger cars	1		3,000 00
Average weight		33,550	
Maximum weight—33,550 pounds			
7. Mail and baggage cars	2		4,000 00
8. Eight-wheel box freight cars	31		18,600 00
10. Eight-wheel platform cars	34		10,200 00
12. Other cars—track cars	15		1,125 00

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	65
15. Number of locomotives equipped with train brakes	Hand brake.
Kind of brake	
16. Number of cars equipped with train brakes	
Kind of brake	

MILEAGE, TRAFFIC, ETC.

1. Miles run by mixed trains (all regular trains are mixed)	43,768
2. Rate of speed of mixed passenger trains, including stops	16
7. Miles run by other trains, and for what purpose:	
Special passenger	1,559
Work trains	2,456
Switching	9,761
8. Total train miles run, including switching	57,544
9. Total number of passengers carried	21,741
Number of through passengers going east (or north)	2,256
Number of through passengers going west (or south)	2,166
Number of local passengers going east (or north)	8,859
Number of local passengers going west (or south)	8,190

10. Total passenger mileage, or passengers carried one mile	538,187
Average number of miles traveled by each local passenger	19.16
Average number of miles traveled by each through passenger	47.75
Average number of miles traveled by each passenger, through and local	25.01
12. Number of tons carried (not including gravel)	30,821.85
Number of tons freight in this State carried	36,571.585
Number tons freight produced in this State carried	27,426.197
Number of tons of each class of freight produced in this State carried:	
Lime	566.728
Sewer pipe	810.720
Powder	96.175
Hay	546.1324
Clay	171.1000
Gravel	5,750.500
Wood	7,776.1257
Fruit	2,012.264
Lumber	2,245.539
Wool	70.895
Flour	1,866.846
Grain	3,204.658
Liquor	784.753
Cobbles	1,508.1528
Granite	16.510
13. Total freight mileage, or tons carried one mile	949,304.439
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	3 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	8 cents.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	8 cents.
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	4⅛ cents.
20. Average rate of fare per mile for all passengers	7 cents.
21. Highest rate of freight per ton per mile for any distance	15 cents.
22. Lowest rate of freight per ton per mile for any distance	3 9/10 cents.
23. Average rate of local freight per ton per mile on roads operated by this company	8.35 cents.
25. Average rate of freight per ton per mile for all	8.35 cents.
26. Average number of cars in mixed trains (including baggage cars)	10 cars.
27. Average number of cars in mixed trains—basis of eight-wheel	
29. Average weight of mixed trains, including locomotive and tender, in working order (exclusive of freight)	160,349 pounds.
30. Number of persons regularly employed by company, including officers	53
Average monthly pay of engine drivers	$120 00
Average monthly pay of passenger conductors	92 00
Average monthly pay of freight conductors	
Average monthly pay of baggage masters	65 00
Average monthly pay of brakemen, flagmen, and switchmen	65 00
Average monthly pay of section men	44 20

Relating to Passengers.

1. Total season ticket passengers (round trip)	4,350

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TABLE A. FUNDED DEBT.

To include all bonds payable by the Company, except United States Government Bonds

Character of—	Date.	Due.	In what money payable—Int'st and Principal	Interest.		Authorized Amount.	Total Issued—December 31, 1880	Accrued Interest.			Am't of Bonds Outstanding December 31, 1880
				Rate.	Payable.			To Dec. 1, '80	During Year	Overdue.	
First mortgage, Sacramento R. R. Co.	July 1, 1865	July 1, 1875	Not speci.	10	Jan. and July	$700,000	$400,000	$180,000	$40,000	$220,000	$400,000
First mortgage, Sacramento and Placerville R. R. Co.	Jan. 1, 1877	Jan. 1, 1907	Gold	6	Jan. and July	1,675,000	700,000		42,000		700,000

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1880.										
			Single.		Length of Roadway—Single and Double Track.			Reduced to Single Track.					
								Track.		Sidings.	Track and Sidings.		
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Iron. (b)	Steel. (c)	Iron and Steel.
Main line within State	Sacramento	Shingle Springs	42.71	5.00	42.71	5.00	47.71	42.71	5.00	6.81	49.52	5.00	54.52
Total on whole road, December 31, 1880			42.71	5.00	42.71	5.00	47.71	42.71	5.00	6.81	49.52	5.00	54.52

The length of rail is double the length of single track, columns (b) and (c) above.

	December 31, 1880.		
	Within State.		
	Length in Miles.	Average Weight per Mile (Tons.)	Total Weight (Tons.)
Length of iron rails	99.04	44.00	4357 1456 2240
Length of steel rails	10.00	34 1840 2240	302 1520 2240

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STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Leland Stanford, President of the Sacramento and Placerville Railroad Company, and James O'B. Gunn, the Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

LELAND STANFORD,
JAMES O'B. GUNN.

Subscribed and sworn to before me, this nineteenth day of February, 1881.

CHARLES TORBERT,
Notary Public.

SAN FRANCISCO AND NORTH PACIFIC RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

Col. Peter Donahue, President	San Francisco.
James M. Donahue, Vice-President	San Francisco.
James M. Donahue, Secretary	San Francisco.
T. J. Bergin, Treasurer	San Francisco.

NAMES OF DIRECTORS:

Col. Peter Donahue	San Francisco.
James M. Donahue	San Francisco.
T. J. Bergin	San Francisco.
Arthur Hughes	San Francisco.
Thomas Donahue	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

No. 426 Montgomery Street — San Francisco, California.

The San Francisco and North Pacific Railroad Company was incorporated June 29, 1877, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

Names of Railroad Companies.	Dates of Incorporation.
San Francisco and North Pacific Railroad Company	June 22, 1872
Sonoma and Marin Railroad Company	November 13, 1874
Fulton and Guerneville Railroad Company	May 23, 1877

CAPITAL STOCK.

1. Capital stock authorized by charter	$12,350,000 00
2. Capital stock authorized by votes of company	500,000 00
5. Total amount paid in as per books of the company	375,000 00
8. Par value of shares issued	100 00
9. Total number of stockholders	5
10. Number of stockholders in California	5
11. Amount of stock held in California	375,000 00

DEBT.

14. Unfunded debt: All other debts, current credit balances, etc., unpaid bills, etc.	$40,316 36
15. Total amount of unfunded debt	$40,316 36

17. Amount of cash, materials, and supplies on hand; sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets	$47,404 24
Cash on hand and in bank	4,959 07
Sinking funds	434,037 03
18. Total net debt liabilities	$486,400 34

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry; 2. Bridging; 3. Superstructure, including rails; 4. Land	$3,137,771 20
6. Engine houses, car sheds, and turn-tables	118,637 08
7. Machine shops	19,351 08
11. Total cost of construction	$3,275,759 36

Equipment.

	Cost.
12. Locomotives	$98,933 34
16. Passenger cars; Mail cars; Baggage cars; 17. Freight cars; Other cars	240,146 96
18. Total for equipment	$339,080 30

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

19. *Lands.*

In Sonoma and Marin Counties:	
Donahue, $8,000 35; Petaluma, $5,000	$13,000 35
Santa Rosa, $8,500; Windsor, $750	9,250 00
Mark West, $750; Healdsburg, $4,000	4,750 00
Cloverdale, $4,000; Geyserville, $750	4,750 00
Fulton, $700; Lakeville, $3,000	3,700 00
San Rafael and Marin County	3,697 00
Total	$39,147 35

Steamboat Property.

	Price Paid.
Steamer James M. Donahue	$155,000 00
Steamer Antelope	90,000 00
Steamer M. S. Latham	16,000 00
Steamer Hattie Ficker	16,000 00
Launch Ruby	1,500 00
Total	$278,500 00

24. INVESTMENTS IN TRANSPORTATION LINES.

	Price Paid.
Sonoma Valley Railroad Company	$161,382 23

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25. OTHER PROPERTY PURCHASED.

Furniture	$6,178 88
Trucks and scales	3,214 93
Engines	6,500 00
	$15,893 81
26. Total for property purchased, etc.	$3,948,380 82
27. Whole amount of permanent investments	161,382 23
29. Amount of supplies and materials on hand	4,959 07
30. Cash and cash assets	320,059 04
31. Total property and assets of the company	$4,434,781 16

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

5. Woodsheds and water stations 6. Engine houses, car sheds, and turn-tables 7. Machine shops	$200 47
14. Freight and other cars	8,987 66
15. Purchase and construction of other roads: Sonoma Valley Railroad	82,437 99
17. Any other expenditures charged to property account: Reconstruction of Branch between Petaluma and San Rafael	22,296 26
Reconstruction at various points on Marin line	3,425 12
18. Total	$117,347 50
19. Property sold and credited to property account during the year: Payment made in 1880 on account of sale of one locomotive	2,046 66
20. Net addition to property account for the year	$115,300 84

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$161,040 29
5. Derived from express and extra baggage	9,000 00
6. Derived from mails	7,234 85
7. Total earnings from passenger department	$177,275 14
8. Derived from local freight on roads operated by this company	165,131 92
12. Total earnings from freight department	165,131 92
14. Total transportation earnings	$342,407 06
17. Income derived from rent of property other than road and equipment: News route Bar on steamers Transfer Company Cottages for workmen at Donahue	$5,888 10
18. Income derived from all other sources: Sonoma Valley Railroad Company, for use of steamers at different periods during the year	8,000 00
Miscellaneous receipts	5,884 00
19. Total income from all sources	$362,179 16

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local (part paid, balance approximated)	$25,576 26
2. General salaries, office expenses, and miscellaneous:	
Expenses of superintendence	4,395 00
Wharf expenses and repairs	609 19
Steamers' expenses, including fuel	37,875 09
Stationery and printing	1,856 55
Advertising	3,864 63
Office expenses	6,017 99
Repairs of steamers, including extras	11,743 94

Restaurant expenses	3,133 67
Interest and discount	121 43
Miscellaneous expenses	555 26
Legal expenses	3,642 70
5. Total	$99,411 71

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$31,758 46
2. Iron rails laid, deducting old rails taken up; weight per yard, 56 pounds. Number of miles	1 mile.
New laid (single rail); weight per yard, 56 pounds. Number of miles	1 mile.
Old, taken up (single rail); weight per yard, 50 pounds. Number of miles	1 mile.
3. Steel rails laid, deducting old rails taken up. Number of miles	2¾ miles.
4. New ties. Number, 10,770; cost	About 40 cents.
5. Repairs of bridges	$1,551 53
6. Repairs of buildings and fixtures (stations and turn-tables)	2,034 39
7. Repairs of and additions to machine shops, machinery, and tools	278 51
10. Repairs of locomotives and salaries, etc., running same	15,592 47
14. Fuel for engines and cars: Number of cords of wood, 3,529; cost	14,116 00
15. Water and water stations	2,915 75
16. Fuel for stations and shops: Charged in station expense and sundry repair accounts.	
17. Oil and waste: Charged in sundry different accounts.	
19. Total	$68,247 21

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, freight, and baggage cars	$13,293 29
3. Damages and gratuities—passengers and freight	546 50
4. Salaries, wages, and incidentals of passenger trains and freight trains	8,673 38
5. Salaries, wages, and incidentals of passenger stations and freight stations	14,839 09
8. Total	$37,352 26

Class IV—Freight traffic expenses.

See Class III. We do not keep separate accounts for freight and passenger expenses.

9. Total expenses of operating the road	$205,011 18
11. Percentage of expenses to total transportation earnings	$56\frac{60}{100}$

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$157,167 98
2. Percentage of same to capital stock and net debt	$.04\frac{15}{100}$
3. Percentage of same to total property and assets	$.03\frac{54}{100}$
7. Balance for the year, surplus	157,167 98
8. Surplus at commencement of the year	487,296 82
10. Total surplus, December 31, 1880	644,464 80

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$3,137,771 20
Cost of equipment, including steamers	810,609 62
Other investments	161,382 23
Supplies and materials on hand	4,959 07
Cash on hand and in bank	47,404 24
Cash due by agents	2,556 85
Bills receivable, loans, etc.	269,438 20
Cash due by stage companies, etc.	659 75
Total	$4,434,781 16

Credits.

Capital stock	$3,750,000 00
Other debts—unpaid bills, pay rolls, etc.	40,316 36
Profit and loss—(profit) unapplied	644,464 80
Total	$4,434,781 16

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PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Freight receipts		$165,131 92
Passenger receipts		161,040 29
Miscellaneous receipts		13,884 00
Express receipts		9,000 00
Postal receipts		7,234 85
Rental receipts		5,888 10
		$362,179 10
Expenses of superintendents	$4,395 00	
Station expenses	14,839 09	
Train service	8,673 38	
Water expenses	2,915 75	
Repairs of track	31,758 46	
Repairs and expenses of running engines	15,592 47	
Repairs of cars	13,293 29	
Repairs of buildings	2,034 49	
Wharf expenses and repairs	609 19	
Bridge expenses	1,551 53	
Stationery and printing	1,856 55	
Loss and damaged freight	546 50	
Locomotive expenses, fuel	14,116 00	
Office expenses	6,017 99	
Repairs of steamers	11,743 94	
Restaurant	3,133 67	
Interest and discount	121 43	
Miscellaneous expenses	555 26	
Taxes	25,596 26	
Legal expenses	3,642 70	
Repairs of shop tools	278 51	
Steamer expenses	37,875 09	
Advertising	3,864 63	
	$205,011 18	
Balance		$157,167 98

DESCRIPTION OF ROAD.

	Miles.	Date of Opening.
1. Date when the road or portions thereof were opened for public use:		
From Donahue to Santa Rosa	23	January 1, 1870
From Santa Rosa to Windsor	9	March 1, 1871
From Windsor to Grant's	4	April 10, 1871
From Grant's to Healdsburg	2	July 1, 1871
From Healdsburg to Cloverdale	18	April 15, 1872
From Fulton to Guerneville	16	May 29, 1876
From Petaluma to San Rafael	21	June 2, 1879
	93	

2. Length of main line of road from Donahue to Cloverdale	56 miles.
Length of main line in California	56 miles.
5. Branches owned by the company—names and description of; single or double track:	
Fulton to Guerneville	16 miles.
San Rafael to Junction (Petaluma)	20½ miles.
6. Total length of branches owned by the company	36½ miles.
7. Total length of branches owned by the company in California	36½ miles.
10. Total length of road belonging to this company	92½ miles.
11. Aggregate length of siding and other tracks not enumerated above	7½ miles.
12. Same in California	7½ miles.

13. Aggregate length of track belonging to this company computed as single track	100 miles.
14. Same in California	100 miles.
15. Total length of steel rail in tracks belonging to this company, not including steel top rail; (weight per yard, 50 pounds)	2 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	18
18. Number of wooden bridges in California	9
19. Number of crossings of highways at grade	126
20. Number of crossings of highways over railroad	2
22. Number of highway bridges eighteen feet above track, in California	2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	126
27. Private or farm crossings, having gates	168
34. Total miles of road operated by this company	92½
35. Total miles of road operated by this company in California	92½
36. Number of stations on all roads operated by this company	32
39. Miles of telegraph on line of road operated by this company	76½
41. Number of telegraph offices in company stations	8
43. Number of telegraph stations operated by this company	8

ROLLING STOCK.

	No.	Average Weight.
1. Locomotives	7	
Average weight of engines in working order		60,500
Maximum weight of engines in working order [64,000]		
2. Tenders	7	
Average weight of tenders full of fuel and water		38,750
Maximum weight of tenders full of fuel and water [40,000]		
Average joint weight of engines and tenders		99,250
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [42 3/12 feet]		
4. Total length of heaviest engine and tender over all [53 feet]		
6. Passenger cars	9	
Average weight		34,700
Maximum weight [36,500]		
7. Mail and baggage cars	3	
8. Eight-wheel box freight cars	40	
10. Eight-wheel platform cars	110	
12. Other cars, open rack cars	9	

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	159
15. Number of locomotives equipped with train brakes (kind of brake, Westinghouse)	4
16. Number of cars equipped with train brakes (kind of brake, Westinghouse)	12
17. Number of passenger cars with Miller platform and buffer	9

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	259,184
2. Rate of speed of express passenger trains, including stops, miles per hour	25
3. Rate of speed of accommodation trains, including stops, miles per hour	20
4. Miles run by freight trains	360,192
5. Rate of speed of express freight trains, including stops, miles per hour	18
6. Rate of speed, accommodation fr't trains, including stops, miles per hour	10 2/11
7. Miles run by other trains, and for what purpose:	
Special excursion trains	1,680
Construction trains	6,800
8. Total train miles run	627,856
9. Total number of passengers carried	101,405
Number of local passengers going north	50,842
Number of local passengers going south	50,563
10. Total passenger mileage, or passengers carried one mile	4,494,441
12. Number of tons carried (not including gravel)	60,273
Number of tons of each class of freight produced in this State carried:	
Live stock	183½ carloads.
Hay	61 carloads.

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Coal	201 carloads.
Bark	114½ carloads.
Rock	187 carloads.
Wood	1,685½ carloads
Pickets	72 carloads.
Grain	12,010,864 lbs.
Flour and meal stuff	1,579,208 lbs.
Shingles	2,986 M.
Lumber	7,435,706 feet.
Wine	3,919,902 lbs.
Wool	2,729,586 lbs.
Lime	147,340 lbs.
Butter	133,635 lbs.
Eggs	139,865 lbs.
Fruit	1,160,598 lbs.
Poultry	662,605 lbs.
Hides	266,967 lbs.
Hops	672,404 lbs.
Quicksilver	142,200 lbs.
Salt	478,274 lbs.
Miscellaneous	24,658,741 lbs.
Total tonnage	120,546,100 lbs.
Railroad freight	$165,131 92
Tons carried one mile	2,496,897 tons.
Rate per ton per mile	6 61/100 cents.
13. Total freight mileage, or tons carried one mile	2,496,897
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	2 25/100 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	3 58/100 cents.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	3 58/100 cents.
20. Average rate of fare per mile for all passengers	3 58/100 cents.
21. Highest rate of freight per ton per mile for any distance	15 cents.
22. Lowest rate of freight per ton per mile for any distance	3 66/100 cents.
23. Average rate of local freight per ton per mile on roads operated by this company	6 61/100 cents.
25. Average rate of freight per mile per ton for all	6 61/100 cents.
Average rate of freight per mile per ton, products of this State	6 61/100 cents.
26. Average number of cars in passenger trains (including baggage cars)	4
27. Average number of cars in freight trains—basis of eight-wheel	18
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	230,700 pounds.
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	427,500 pounds.
30. Number of persons regularly employed by company, including officers	155
Average monthly pay of employés, other than officers	$70 00
Average monthly pay of engine drivers	102 50
Average monthly pay of passenger conductors	93 33
Average monthly pay of freight conductors	90 00
Average monthly pay of baggagemasters	65 00
Average monthly pay of brakemen, flagmen, and switchmen	60 00
Average monthly pay of section men as foremen	60 00
Average monthly pay of mechanics in shops	90 00
Average monthly pay of laborers	47 25

Relating to Passengers.

2. Passengers to San Francisco (including season)	39,704
3. Passengers from San Francisco (including season)	39,725

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

Length of Track, December 31, 1880.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Single.		Length of Roadway—Single and Double Track.			Reduced to Single Track.				
								Track.		Sidings.	Track and Sidings.	
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Iron.	Steel.	Iron and Steel.
Main line within State	Donahue	Cloverdale	54½	1½	90½	2	92½	90½	2	7½	(b) 98	(c) 2	100
	San Rafael	Junction	20	½									
	Fulton	Guerneville	16										
Total on whole road, December 31, 1880			90½	2									

The length of rail is double the length of single track, columns (b) and (c) above.

December 31, 1880—Within the State.

	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rails	181	44	7,964
Length of steel rails	4	25	100

Total length of iron rail laid during the year	1 mile.
Total length of steel rail laid during the year	2¾ miles.
Total length of iron rail replaced by steel rail during the year	2¾ miles.

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STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Peter Donahue, President of the San Francisco and North Pacific Railroad Company, and James M. Donahue, Secretary of the said company, being duly sworn, depose and say that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

P. DONAHUE, President.
JAS. M. DONAHUE, Secretary.

Subscribed and sworn to before me, this fourth day of March, 1881.

OTIS V. SAWYER,
Notary Public.

SAN PABLO AND TULARE RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
Charles Crocker, Vice-President	San Francisco.
George Crocker, Treasurer	San Francisco.
E. H. Miller, Jr.	San Francisco.
W. V. Huntington	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco — California.

The San Pablo and Tulare Railroad Company was incorporated July 19, 1871.

CAPITAL STOCK.

1. Capital stock authorized by charter		$3,750,000 00
2. Capital stock authorized by votes of company		3,750,000 00
3. Capital stock issued [number of shares, 18,610]; amount paid in		1,861,000 00
5. Total amount paid in as per books of the company		1,861,000 00
8. Par value of shares issued		100 00
9. Total number of stockholders	17	
10. Number of stockholders in California	16	
11. Amount of stock held in California		1,813,300 00

DEBT.

12. Funded debt as follows:		
Bonds		$1,023,000 00
Interest paid on same during year	$61,380 00	
13. Total amount of funded debt		$1,023,000 00
16. Total gross debt liabilities		$1,023,000 00
17. Other securities and debt balances		212,120 55
18. Total net debt liabilities		$810,879 45

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

11. Total cost of construction (not segregated)	$2,895,392 89

PROPERTY PURCHASED.

27. Whole amount of permanent investments	$2,895,392 89
30. Cash and cash assets	212,120 55
31. Total property and assets of the company	$3,107,513 44

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

2. Bridging	$206 64
4. Land	150 00
Fences	140 71
5. Passenger and freight stations	1,576 60
6. Engine houses, car sheds, and turn-tables	600 92
8. Telegraph construction	1,355 87
18. Total	$4,030 74
20. Net addition to property account for the year	$4,030 74

REVENUE FOR THE YEAR.

13. Derived from rents for use of road and equipment, when leased	$167,464 80
14. Total transportation earnings: Reported by Central Pacific Railroad Company.	
19. Total income derived from all sources	$167,464 80

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$327 38
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	2,101 70
5. Total	$2,429 08

Class II—Maintenance of way and buildings, and movement expenses.

Included in report of Central Pacific Railroad Company.

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$165,035 72
2. Percentage of same to capital stock and net debt	.06[2]
3. Percentage of same to total property and assets	.05[3]
4. Interest accrued during the year: On funded debt	61,380 00
7. Balance for the year, or surplus	$103,655 72
8. Surplus at commencement of the year	119,857 72
10. Total surplus December 31, 1880	$223,513 44

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$2,895,392 89
Cash, cash assets, and other items: Balance current accounts	212,120 55
Total	$3,107,513 44

Credits.

Capital stock	$1,861,000 00
Funded debt	1,023,000 00
Profit and loss (profit)	223,513 44
Total	$3,107,513 44

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PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Rental		$167,464 80
Interest	$61,380 00	
Taxes	327 38	
General expenses	2,101 70	
Balance profit	103,655 72	
	$167,464 80	$167,464 80

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use: From Tracy to Martinez	Sept. 3, 1878.
2. Length of main line of road	Not completed.
3. Length of line with track laid	46.5180 miles.
10. Total length of road belonging to this company	46.5180 miles.
11. Aggregate length of siding and other tracks not enumerated above	9.8248 miles.
13. Aggregate length of track belonging to this company computed as single track	56.3428 miles.
15. Total length of steel rail in tracks belonging to this company, not including steel top rail (weight per yard, fifty pounds)	93.0360 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	2
18. Number of wooden bridges (aggregate length, 5,930 feet) in California	80
19. Number of crossings of highways at grade, in California	33
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	33
27. Number of railroad crossings at grade	1
29. Number of railroad crossings under other railroads: Pittsburg Railroad (18½ feet in clear), Black Diamond Railroad (19 feet in clear), Empire Railroad (19 feet 2 inches in clear)	3
34. Total miles of road operated by this company	Road is leased.
37. Number of stations on all roads owned by this company	9
40. Miles of telegraph owned by this company	46½ miles.
41. Number of telegraph offices in company stations	8

MILEAGE, TRAFFIC, ETC.

Included in report of the Central Pacific Railroad Company.

12. TABLE A. FUNDED DEBT.

To include all bonds payable by the Company, except United States Government Bonds.

Character of	Date	Due	In What Money Payable.		Interest.		Authorized Amount
			Interest.	Principal.	Rate.	Payable.	
1st mortgage.	April 1, 1878.	April 1, 1908.	Gold.	Gold.	6	Oct. & April.	$3,750,000 00

TABLE A—Continued.

Total Issued.	Accrued Interest.	Amount of Bonds Outstanding Dec. 31, 1880.
Dec. 31, 1880.	During Year.	
$1,023,000 00	$61,380 00	$1,023,000 00

TABLE A—Continued.

Character of—	Bonds Sold During the Year Ending December 31, 1880.	
	Amount of Bonds.	Amount Realized.
First mortgage	$1,023,000 00	$1,023,000 00

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

Length of Track December 31, 1880.

State, separately, length within and without State. Reduce to single track by adding length of double track.

Main Line and Branches.	From—	To—	Single.	Reduced to Single Track.						
				Length of Roadway—Single and Double Track.		Track.	Sidings.	Track and Sidings.		
			Steel.	Steel.	Iron and Steel.	Steel.	Iron.	Iron.	Steel.	Iron and Steel.
Main line within State	Tracy	Martinez	46.5180	46.5180	46.5180	46.5180	9.8248	(b) 9.8248	(c) 46.5180	56.3428
Total on whole road Dec. 31, 1880			46.5180				0.9177	0.9177		0.9177

The length of rail is double the length of single track, columns (b) and (c) above.

December 31, 1880—Within the State.

	Length in Miles.	Average Weight per Mile.	Total Weight, (Tons.)	Length in Miles.	Average Weight per Mile.	Total Weight, (Tons.)
Length of iron rails	19.6496	44.000	864.5824			
Length of steel rails	93.0360	39.2657	3654.9844			
Total length of iron rails laid during the year				1.8354	44.000	80.7576

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Leland Stanford, President of the San Pablo and Tulare Railroad Company, and J. O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

LELAND STANFORD.
J. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth day of February, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

SOUTHERN PACIFIC RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

Charles Crocker, President	San Francisco.
Charles F. Crocker, Vice-President	San Francisco.
N. T. Smith, Treasurer	San Francisco.
J. L. Willcutt, Secretary	Oakland.
George E. Grey, Chief Engineer	San Francisco.
A. C. Bassett, Superintendent	San Francisco.
Jerome Madden, Land Agent	San Francisco.

NAMES OF DIRECTORS:

Charles Crocker	San Francisco.
Charles F. Crocker	San Francisco.
H. M. Newhall	San Francisco.
Charles Mayne	San Francisco.
N. T. Smith	San Francisco.
W. V. Huntington	San Francisco.
J. L. Willcutt	Oakland.

BUSINESS ADDRESS OF THE COMPANY:

Southern Pacific Railroad Company ..... San Francisco, California.

The Southern Pacific Railroad Company was incorporated December 18, 1874, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

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Names of Railroad Companies.	Dates of Incorporation.	Names of Railroad Companies.	Dates of Incorporation.	Names of Railroad Companies.	Dates of Incorporation.
Southern Pacific Railroad Company	Aug. 19, 1873	Southern Pacific Railroad Co.	Oct. 12, 1870	S. Francisco and San José R. R. Co.	Aug. 19, 1860.
				Southern Pacific Railroad Co.	Dec. 2, 1865.
				S'ta Clara and Pajaro Val. R. R. Co.	Jan. 2, 1868.
				California Southern Railroad Co.	Jan. 22, 1870.
Los Angeles and San Pedro R. R. Co.	Feb. 18, 1868.	Southern Pacific Branch R. R. Co.	Dec. 23, 1873.		

CAPITAL STOCK.

1. Capital stock authorized by charter		$90,000,000 00
3. Capital stock issued [number of shares, 364,770]; amount paid in		36,477,000 00
4. Capital stock paid in on shares not issued [number of shares, 16,450]		286,900 00
5. Total amount paid in as per books of the company		36,763,900 00
7. Amount per share still due thereon	$80 per share on 12,240 shares $90 per share on 4,210 shares	82 55
8. Par value of shares issued		100 00
9. Total number of stockholders	35	
10. Number of stockholders in California	29	
11. Amount of stock held in California		30,945,950 00

DEBT.

12. Funded debt as follows:		
Bonds		28,872,000 00
Interest paid on bonds during year	$1,741,740	
13. Total amount of funded debt		$28,872,000 00
14. Unfunded debt:		
Incurred for construction, equipment, or purchase of property		$92,791 92
All other debts, current credit balances, etc.		577,418 70
15. Total amount of unfunded debt		$670,210 62
16. Total gross debt liabilities		$29,542,210 62
17. Amount of cash, material, and supplies on hand; sinking funds in hands of trustees, and securities and debt balances, as represent cash assets:		
Cash on hand		$203,099 27
Materials and supplies on hand		101,971 27
Other securities and debt balances		899,393 87
18. Total net debt liabilities		$28,337,746 21

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry 2. Bridging 3. Superstructure, including rails and turn-tables 4. Land Land damages Fences		$62,149,564 60
5. Passenger and freight stations, and water stations		657,846 59
6. Engine houses, and car sheds		99,399 15
7. Machine shops, including machinery and tools		139,679 36
9. Engineering—Agencies, salaries, and other expenses during construction: Included in contract for construction of road.		
11. Total cost of construction		$63,046,480 70

Equipment.

	No.	Cost.
12. Locomotives	48	$589,549 68
15. Sleeping cars	2	15,232 42
Mail cars	74	308,626 10
Baggage cars	3	10,689 55
17. Freight cars	10	31,009 25
Other cars	950	862,644 06
	208	29,652 11
18. Total for equipment		$1,847,403 17

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27. Whole amount of permanent investments	$64,893,883 87
28. Property in California	64,893,883 87
29. Amount of supplies and materials on hand	101,971 27
30. Cash and cash assets	1,102,493 14
31. Total property and assets of the company	$66,098,348 28

32. SINKING AND CONTINGENT FUNDS.

Showing Amount of Same, and Their Purpose.

Applicable to Redemption of what Bonds.		Terms and Conditions of Funds.	Total to December 31, 1880.			Received During Year.	Applied During Year.	On Hand Dec. 31, 1880.
Character.	Series.		Invested.	Applied.	On Hand.			
First mortgage	"A"	Proceeds of sales of Government lands. Sinking fund $100,000 yearly, to commence 1882.	$720,620 28	$597,405 00	$123,215 28	$126,327 25	$299,655 00	$123,215 28
First mortgage	"B"							
First mortgage	"C"							
First mortgage	"D"							

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EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry		
2. Bridging		
3. Superstructure, including rails and turn-tables		$85,267 46
4. Land		
Land damages		
Fences		
5. Passenger and freight stations		13,101 07
Woodsheds and water stations		
6. Engine houses and car sheds		356 84
7. Machine shops and machinery and tools		112 79
9. Locomotives	[2]	26,950 00
13. Passenger, mail, and baggage cars	[7]	30,774 75
Less amount received from contractors for uncompleted work, and for equipment not required by the company and not furnished		2,067,024 00
18. Total		$1,910,676 67
19. Property sold and credited to property account during the year, specifying same:		
Buildings		150 00
20. Net deduction from property account for the year		$1,910,826 67

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company		$409,492 86
2. Derived from passengers from and to other roads, over roads operated by this company		15,719 45
5. Derived from express and extra baggage		12,344 50
6. Derived from mails		12,371 92
7. Total earnings from passenger department		$449,928 73
8. Derived from local freight on roads operated by this company		$541,267 10
12. Total earnings from freight department		$541,267 10
13. Derived from rents for use of road and equipment when leased		$1,650,600 00
14. Total transportation earnings		$991,195 83
15. Earnings per mile of road operated	[176.29 miles]	$5,622 53
16. Earnings per train mile—total passenger and freight	[421,838 miles]	2 35
17. Income derived from rent of property, other than road and equipment:		
Rent of buildings	$5,162 16	
Rent of ground	5,958 94	11,121 10
18. Income derived from all other sources (including accretions from sinking funds, investments in stock, bonds, steamboat property, transportation lines, etc.):		
Storage		8,215 02
Miscellaneous		5,312 05
Telegraph		3,000 00
19. Total income derived from all sources		$2,669,444 00

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local (Northern Division)	$38,061 17
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
General accounts, embracing sundries of general officers, general office expenses, legal expenses, etc.	26,250 29
Expenses of Superintendent	5,392 86
Station service	39,013 34
Train service	69,413 81
Office expense	35,649 68
Stationery and printing	8,423 69

Advertising	$6,379 57
Repairing of tools	3,899 61
Miscellaneous expense	1,331 48
Locomotive service (labor)	54,833 86
5. Total	$288,673 36
6. Proportion belonging to passenger department 454 per cent.	$121,057 61
7. Proportion belonging to freight department 546 per cent.	157,615 65

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)		$100,012 40
2. Iron rails laid, deducting old rails taken up		
3. Steel rails laid, deducting old rails taken up		15,747 76
5. Repairs of bridges		27,669 44
6. Repairs of buildings and fixtures (stations and turn-tables)		10,674 90
8. Repairs of fences, road crossings, and signs		854 41
10. Repairs of locomotives		21,190 95
14. Fuel for engines and cars:		
Number of cords of wood, 827½; cost	$4,261 57	
Number of tons of coal, ——; cost	65,876 44	70,138 01
15. Water and water stations		8,455 32
19. Total		$226,314 02
20. Proportion of same to passenger department 454 per cent.		$102,746 57
21. Proportion of same to freight department 546 per cent.		123,567.45

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars	$22,241 21
3. Damages and gratuities (passengers)	812 00
4. Mail service	826 25
5. Salaries, wages, and incidentals of passenger stations	8,100 00
8. Total	$31,979 46

Class IV—Freight traffic expenses.

1. Repairs of freight cars	$19,789 22
3. Damages and gratuities (freight)	896 93
5. Salaries, wages, and incidentals of freight stations	32,340 69
8. Total	$53,026 84
9. Total expenses of operating the road embraced in Classes I, II, III, and IV	$620,393 68
10. Per train mile (total passenger and freight) [1 47]	
11. Percentage of expenses to total transportation earnings [62.59 per cent]	
12. Amount paid other companies as rent for use of road, specifying each company, the amount and basis on which rent is computed	20,400 00
Taxes, State and local (Southern Division leased road)	148,363 31
General accounts—embracing salaries of general officers, general office expenses, legal expenses, etc. (Southern Division leased road)	49,005 97
13. Total expenses	$817,762 96

NET INCOME, DIVIDENDS, ETC.

4. Interest accrued during the year:		
On funded debt		$1,741,740 00
On other debt		25,145 61
Total		$1,796,885 61
8. Deficit at commencement of the year	$740,362 58	$532,600 24
Deduct entries made in profit and loss account during the year, not included in the foregoing statement	$447,804 81	
9. Deficit at commencement of the year, as changed by aforesaid entries		292,557 77
10. Total deficit December 31, 1880		207,762 34

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EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from Passenger Department, as per "Revenue for the Year," No. 7	$449,928 73
2. Per passenger train mile	1 46
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	221,057 61
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	102,746 57
	31,979 46
5. Expenses, "Passenger Traffic," as per Class III, No. 8	9,261 60
Four hundred and fifty-four per cent of amount paid leased road	265,045 24
6. Total expenses	86
7. Per passenger train mile	184,883 49
8. Net earnings	60
9. Per passenger train mile	

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from Freight Department, as per "Revenue for the Year," No. 12	$541,267 10
2. Per freight train mile	3 63
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	157,615 65
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 21	123,567 45
	53,026 84
5. Expenses, "Freight Traffic," as per Class IV, No. 8	11,138 40
Five hundred and forty-six per cent of amount paid leased road	345,348 34
6. Total expenses	2 32
7. Per freight train mile	195,918 76
8. Net earnings	1 31
9. Per freight train mile	

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$63,046,480 70
Cost of equipment	1,847,403 17
Supplies and materials on hand	101,971 27
Cash	203,099 27
Current accounts	860,238 44
Other accounts	39,155 43
Profit and loss (loss)	207,762 34
Total	$66,306,110 62

Credits.

Capital stock	$36,763,900 00
Funded debt	28,872,000 00
Other debts:	
Western Development Company	83,956 92
Land account and stumpage	126,917 47
Due for interest coupons not presented	8,835 00
Current accounts	450,501 23
Total	$66,306,110 62

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
To balance	$740,362 58	
To operating expenses	571,829 98	
To general expenses	59,561 07	
To legal expenses	15,241 20	
To taxes	186,156 52	
To street assessments	267 96	
To interest	25,145 61	
To interest on bonds	1,741,740 00	
To other accounts	649 18	
By road earnings		$2,669,444 00
By road earnings and contract with Wells, Fargo & Co.		134,000 00
By trustees' first mortgage bonds		299,655 00
By discount on bonds and stock		14,345 00
By renewal of track		15,747 76
By balance		207,762 34
	$3,340,954 10	$3,340,954 10
To balance brought down	207,762 34	

DESCRIPTION OF ROAD.

1. Date when portions of the road were opened for public use:	
From San Francisco to Menlo Park	October 17, 1863.
From Menlo Park to San José	January 16, 1864.
From San José to Perry's	January 11, 1869.
From Perry's to Gilroy	March 13, 1869.
From Gilroy to Pajaro	Nov. 27, 1871.
From Pajaro to Salinas	Nov. 1, 1872.
From Salinas to Soledad	August 12, 1873.
From Carnadero to Hollister	July 31, 1870.
From Hollister to Tres Pinos	August 12, 1873.
From Goshen to Huron	February 1, 1877.
From Goshen to Tripton	July 25, 1872.
From Tripton to Delano	July 14, 1873.
From Delano to ten miles south of Lerdo	August 1, 1874.
From ten miles south of Lerdo to Sumner	October 26, 1874.
From Sumner to Caliente	April 26, 1875.
From Caliente to Keene's	May 26, 1876.
From Keene's to Mojave	August 9, 1876.
From Mojave to Tunnel	Sept. 6, 1876.
From Tunnel to San Fernando	January 1, 1876.
From San Fernando to Los Angeles	April 15, 1874.
From Los Angeles to Spadra	April 15, 1874.
From Spadra to Colton	July 16, 1875.
From Colton to Indio	May 29, 1876.
From Indio to Dos Palmas	March 8, 1876.
From Dos Palmas to Pilot Knob	April 29, 1877.
From Pilot Knob to Colorado River	May 23, 1877.
From Los Angeles to Wilmington	October 26, 1869.
2. Length of main line of road from San Francisco to Colorado River	711.51 miles.
Length of main line in California	711.51 miles.
10. Total length of road belonging to this company	711.51 miles.
11. Aggregate length of siding and other tracks not enumerated above	56.83 miles.
12. Same in California	56.83 miles.
13. Aggregate length of track belonging to this company computed as single track	768.34 miles.
14. Same in California	768.34 miles.
15. Total length of steel rail in tracks belonging to this company, not including steel top rail (weight per yard, fifty pounds)	778.36 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	44
18. Number of wooden bridges in California	19

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19. Number of crossings of highways at grade, in California	390
20. Number of crossings of highways over railroad, in California	2
23. Number of highway bridges less than eighteen feet above track, in California	2
24. Number of highway crossings at which gates or flagmen are maintained, in California	2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	388
27. Number of railroad crossings at grade:	
At Santa Clara over S. P. Coast Railroad	1

ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY UNDER LEASE OR CONTRACT.

30. *Names, description, and length of each.*

Name of Company.	Termini.		Length (Miles).	Dates of Lease.		Amount of Rental.
	From—	To—		From—	To—	
Monterey Railroad Company	Castroville	Monterey	15.4	Jan. 1, 1880	60 days notice	$1,700 per month.

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34. Total miles of road operated by this company	176.29 miles.
35. Total miles of road operated by this company in California	176.29 miles.
36. Number of stations on all roads operated by this company	63
37. Number of stations on all roads owned by this company	133
38. Same in California	132
39. Miles of telegraph on line of road operated by this company	176.29 miles.
40. Miles of telegraph owned by this company	711.51 miles.
41. Number of telegraph offices in company stations	44
42. Number of telegraph stations operated by this company	23
43. Number of telegraph stations operated jointly by railroad and telegraph companies	44

ROLLING STOCK.

	No.	Average Weight—Tons of 2,000 lbs.	Market Value.*
1. Locomotives	48		
Average weight of engines in working order		31.5	
Maximum weight of engines in working order [38.2]			
2. Tenders	48		
Maximum weight of tenders full of fuel and water [27.7]			
Average joint weight of engines and tenders		54.6	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [45 feet]			
4. Total length of heaviest engine and tender over all [52.2 feet]			
6. Passenger cars	76		
Average weight		18.2	
Maximum weight [27.9]			
7. Mail and baggage cars	12	15.7	
8. Eight-wheel box freight cars	581	9.8	
10. Eight-wheel platform cars	349	8	
12. Other cars	228	2.2	

*In the absence of any demand for rolling stock, there is no basis upon which the market value can be determined.

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	930
15. Number of locomotives equipped with train brakes (Westinghouse air)	24
16. Number of cars equipped with train brakes (Westinghouse air)	75
17. Number of passenger cars with Miller platform and buffer	71

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	273,773 miles.
2. Rate of speed of express passenger trains, including stops	35 miles per hr.
3. Rate of speed of accommodation trains, including stops	30 miles per hr.
4. Miles run by freight trains	121,017 miles.
5. Rate of speed of express freight trains, including stops	12½ miles per hr.
6. Rate of speed of accommodation freight trains, including stops	7 miles per hr.
8. Total train miles run	458,163 miles.
9. Total number of passengers carried	445,118
Number of local passengers going east (or north)	221,406
Number of local passengers going west (or south)	223,712
10. Total passenger mileage, or passengers carried one mile	15,015,805
11. Passenger mileage to and from other roads	889,782
Average number of miles traveled by each local passenger	$33\frac{73}{100}$ miles.
Average number of miles traveled by each passenger, through and local	$33\frac{73}{100}$ miles.
12. Number of tons carried (not including gravel)	228,653
Number of tons of each class of freight produced in this State, carried:	
Asphaltum	19
Brick	3,288
Charcoal	34
Coal	5,475

Fence posts	320
Flour	3,237
Fruit	4,211
Grain	77,997
Hay	24,310
Lime	2,447
Lumber	15,845
Milk	2,708
Pickets	1,030
Quicksilver	530
Shingles	832
Stock	16,770
Tan bark	730
Vegetables	5,365
Wood	4,380
Wool	1,576
Merchandise	57,549
13. Total freight mileage, or tons carried one mile	15,700,514
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents max.
16. Lowest rate of fare per mile for any distance (single fare)	$2\frac{75}{100}$ cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	3 cents.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	No ferry; 3 cents.
18. Average rate of fare per mile received from passengers to and from other roads	$2\frac{83}{100}$ cents.
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	$0\frac{66}{100}$ cents.
20. Average rate of fare per mile for all passengers	$2\frac{73}{100}$ cents.
21. Highest rate of freight per ton per mile for any distance	15 cents.
22. Lowest rate of freight per ton per mile for any distance	2 cents.
23. Average rate of local freight per ton per mile on roads operated by this company	$3\frac{6}{10}$ cents.
24. Average rate of freight per ton per mile to and from other roads	
25. Average rate of freight per ton per mile for all	
26. Average number of cars in passenger trains (including baggage cars)	$4\frac{18}{100}$
27. Average number of cars in freight trains—basis of eight-wheel	$19\frac{5}{100}$
28. Average weight of passenger trains, including locomotives and tenders, in working order (exclusive of passengers)	261,217 pounds.
29. Average weight of freight trains, including locomotives and tenders, in working order (exclusive of freight)	466,612 pounds.
30. Number of persons regularly employed by company, including officers	500
Average monthly pay of employés, other than officers	$102 68
Average daily pay of engine drivers	$3 50, $3 75, $4 25
Average daily pay of firemen	$2 and $2 50
Average monthly pay of passenger conductors	$100 and $110
Average monthly pay of freight conductors	$85 and $100
Average monthly pay of baggage masters	$75
Average monthly pay of brakemen	$65
Average monthly pay of flagmen	$60
Average monthly pay of switchmen	$55
Average monthly pay of section men	$65 and $75
Average daily pay of laborers	$1 75
Average hourly pay of mechanics in shops	30, 35, and 37 cts.
Average hourly pay of carpenters	28 and 37 cts.
Average hourly pay of boiler-makers	34 and 37 cts.
Average hourly pay of blacksmiths	36 cts.
Average hourly pay of laborers	20 and 22½ cts.
Average monthly pay of agents	$42 50 and $135
Average hourly pay of wipers	20 cts.

Relating to Passengers.

1. Total season ticket passengers (round trip)	73,228
2. Passengers to San Francisco (including season)	175,947
3. Passengers from San Francisco (including season)	176,280
4. Season ticket passengers to and from San Francisco (one round trip daily)	72,748

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LIST OF ACCIDENTS IN CALIFORNIA.

	From causes beyond their own control, in California.		From their own misconduct or carelessness, in California.		Total, in California.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers						
Employés		1	2		2	1
Others			6	4	6	4
Total		1	8	4	8	5

STATEMENT OF EACH ACCIDENT IN CALIFORNIA.

June 18—Switch misplaced by some evil disposed person; engine and five cars derailed; fireman slightly injured.

June 19—A man suicided by throwing himself in front of the train which was running thirty-five miles per hour; he was run over and killed before the train could be stopped.

July 26—A woman had her leg broken by jumping from train while in motion.

August 6—A wagon containing two men was struck by a train on a crossing; all necessary alarm signals given; men supposed to have been under the influence of liquor; not seriously injured.

August 31—Drunken man run over and killed; supposed to have been a case of suicide.

September 9—Wagon containing two ladies and driver struck by express train on crossing; alarm signals sounded; the driver was trying to cross track ahead of train; driver killed, no one else hurt.

October 1—A man struck by the passenger train; said he did not hear the train coming; was in San Francisco city limits; bell ringing at time; not seriously injured.

October 20—Station employé killed while endeavoring to board a moving train.

November 21—Brakeman killed; fell from the top of train and was run over.

December 24—A man caught his foot in guard rail and was run over and killed; supposed to have been drunk.

December 28—A man run over by night freight train and killed; supposed to have been a tramp who fell off while stealing a ride on brake-beam.

December 30—Wagon driven by drunken man struck by switching engine in yard; the wagon driver received injuries from which he since died.

TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of Bonds.	Series.	Date.	Due.	In what money payable. Interest and Principal.	Interest. Rate.	Interest. Payable.	Authorized Amount.	Total issued December 31, 1880.	Accrued Interest. During year.	Accrued Interest. Overdue.	Amount of Bonds outstanding December 31, 1880.
First mortgage	A	Apr. 1, 1875	Apr. 1, 1905	Gold coin	6 per c't.	Oct. 1 and Apr. 1	$15,000,000	$15,000,000	$877,980	} $8,835	$14,476,000
First mortgage	B	Oct. 1, 1875	Oct. 1, 1905	Gold coin	6 per c't.	Apr. 1 and Oct. 1	5,000,000	5,000,000	299,400		4,990,000
First mortgage	C	Oct. 1, 1876	Oct. 1, 1906	Gold coin	6 per c't.	Apr. 1 and Oct. 1	5,000,000	5,000,000	293,160		4,886,000
First mortgage	D	Oct. 1, 1876	Oct. 1, 1906	Gold coin	6 per c't.	Apr. 1 and Oct. 1	5,000,000	4,520,000	271,200		4,520,000

TABLE A. FUNDED DEBT—Continued.

Character of—	Series.	Bonds redeemed during year ending December 31, 1880. Amount.	Cost.	Discount or Premium.
First mortgage	A	$314,000	$299,655	$14,345

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1880.										
			Single.		Length of Roadway—Single and Double Track.			Reduced to Single Track.					
								Track.		Sidings.		Track and Sidings.	
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Steel.	Iron.	Steel.	Iron and Steel.
												(b)	(c)	
Main line within State:														
Northern Division	San Francisco	Tulare & Soledad	111.76	49.13	111.76	49.13	160.89	111.76	49.13	26.37	------	138.13	49.13	187.26
Goshen Division	Huron	Goshen	------	40.00	------	40.00	40.00	------	40.00	------	1.61	------	41.61	41.61
Tulare Division	Goshen	Mojave	96.85	44.81	96.85	44.81	141.66	76.85	44.81	6.58	4.42	103.43	49.23	152.66
Los Angeles Division	Mojave	Los Angeles	20.53	78.59	20.53	78.59	99.12	20.53	78.59	2.28	3.35	22.81	81.94	104.75
Yuma Division	Los Angeles	Colorado River	85.64	162.54	85.64	162.14	247.78	85.64	162.14	4.46	5.13	90.10	167.27	257.37
Wilmington Division	Los Angeles	Wilmington	22.06	------	22.06	------	22.06	22.06	------	2.63	------	24.69	------	24.69
Total on whole road, December 31, 1880			336.84	374.67	336.84	374.67	711.51	336.84	374.67	42.32	14.51	379.16	389.18	768.34

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1880—Within State.			December 31, 1880—Within State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons.)	Length in Miles.	Average Weight per Mile.	Total Weight (Tons.)
Length of iron rails	758.32	44	33,366.08	404	44	177.76
Length of steel rails	778.36	39⅔	30,578.43			

TABLE E. OTHER AIDS OR GRANTS, FROM THE UNITED STATES, STATES, COUNTIES, CORPORATIONS, OR INDIVIDUALS.

Lands Granted by the United States Government.

To what Railroad Company.	Acres per Mile.	Number of Miles.	Number of Acres.			Estimated Value.	
			Total.	Less Reserved by Governm't.	Net Total.	Per Acre.	Total.
Southern Pacific	12,800	942	20,057,600	1,518,933	10,538,667	$2 50	$26,346,667 50
	12,800	942	12,057,600	1,518,933	10,538,677	$2 50	$26,346,667 50

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LANDS OR PROPERTY, INCLUDING RIGHT OF WAY, DONATED BY STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, STATING IN DETAIL THE AMOUNT OF LAND GRANTED FOR RIGHT OF WAY, FOR STATIONS, FOR SHOPS, FOR STOREHOUSES, ETC.

By Whom Donated.	Description of Property.	Assessed Value—1880-81.
State of California	Half interest in sixty acres land at Mission Bay, San Francisco, with improvements	$131,460 00
City of Los Angeles	Fifteen acres in City of Los Angeles	7,500 00

Right of way included in contract for construction of road.

NOTE.—The right of way lands for stations, etc., have generally been procured by the contractors under their contract for construction of road. Locations of small tracts of land have, however, sometimes been made to the company.

TABLE F. SALES OF LANDS GRANTED BY UNITED STATES GOVERNMENT.

Total sales and accrued interest, in currency and coin.

	Acres Sold.	Average Price.	Amount.		
			Principal.	Interest Accrued.	Total.
Lands to December 31, 1879	277,011.45	$3.6169	$1,001,944 72	$206,146 45	$1,208,091 17
Timber and stumpage to December 31, 1879			1,071 75		1,071 75
Total to December 31, 1880	295,266.65	$3.95096	$1,166,589 61	$247,054 07	$1,441,191 36

Amounts paid and due on sales above stated—currency and coin.

	Amount Due.			Amount Paid.		
	Principal.	Accrued Interest.	Total.	Principal.	Interest.	Total.
To December 31, 1880	$554,822 66	$43,731 80	$598,554 46	$624,283 76	$203,322 27	$827,606 03
To December 31, 1879	479,186 48	40,242 13	519,428 61	530,381 54	165,904 32	696,285 86
During year, ending December 31, 1880	$75,636 18	$3,489 67	$79,125 85	$93,902 22	$37,417 95	$131,320 17

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NET CASH RECEIPTS IN COIN, DEDUCTING DISCOUNT ON CURRENCY AND EXPENSES.

	Coin.	Less Expenses.	Net Coin Receipts.
To December 31, 1880	$900,778 48	$180,158 20	$720,620 28
During year	168,130 49	41,763 24	126,367 25

APPLICATION OF AMOUNT PLACED IN HANDS OF TRUSTEES FOR REDEMPTION OF BONDS, (TO BE STATED IN COIN.)

	Bonds Redeemed.			Total Received by Trustees.	Balance on Hand.	Discount on Bonds Redeemed.
	No.	Amount.	Cost.			
To December 31, 1880	648	$648,000 00	$597,405 00	$720,620 28	$123,215 28	$50,595 00
During year	314	314,000 00	299,655 00	126,367 25	173,287 75	14,345 00
Totals	648	$648,000 00	$597,405 00	$720,620 28	$123,215 28	$50,595 00
Total net receipts as above stated				$720,620 28		

Patents received to December 31, 1880—number of acres	1,139,141.61
Number of purchasers to December 31, 1880	929
Average number of acres sold to each	31782782

STATE OF CALIFORNIA,
City and County of San Francisco, } ss.

Charles Crocker, President of the Southern Pacific Railroad Company, and J. L. Willcutt, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

CHAS. CROCKER.
J. L. WILLCUTT.

Subscribed and sworn to before me, this twenty-fifth (25) day of April, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

STOCKTON AND COPPEROPOLIS RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
Chas. Crocker, Vice-President	San Francisco.
Geo. Crocker, Treasurer	San Francisco.
W. V. Huntington	San Francisco.
E. H. Miller, Jr.	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The Stockton and Copperopolis Railroad Company was incorporated November 17, 1877, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

Names of Railroad Companies.	Dates of Incorporation.
Stockton and Copperopolis Railroad Company	October 11, 1865
Stockton and Visalia Railroad Company	December 16, 1869

CAPITAL STOCK.

1. Capital stock authorized by charter	$7,000,000 00
2. Capital stock authorized by votes of company	7,000,000 00
3. Capital stock issued [number of shares, 2,345]; amount paid in	234,500 00
5. Total amount paid in as per books of the company	234,500 00
8. Par value of shares issued	100 00
9. Total number of stockholders	14
10. Number of stockholders in California	12
11. Amount of stock held in California	205,200 00

DEBT.

12. Funded debt as follows:		
Bonds		$500,000 00
Interest paid on same during year	$25,000	
13. Total amount of funded debt		$500,000 00
14. Unfunded debt:		
All other debts, current credit balances, etc.		$234,343 54
15. Total amount of unfunded debt		$234,343 54
16. Total gross debt liabilities		$734,343 54
18. Total net debt liabilities		$734,343 54

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

11. Total cost of construction (never segregated in detail)	$733,879 61
15. Equipment (cost included in construction):	
Locomotives	3
Passenger cars	3
Baggage cars	1
Freight cars	45
27. Whole amount of permanent investments	$733,879 61
28. Property in California	All.
31. Total property and assets of the company	$733,879 61

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EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

Nothing.

REVENUE FOR THE YEAR.

The company having leased the road to the Central Pacific Railroad Company, for a term of years, that company taking all the traffic, earnings, and paying the current operating expenses, including the same in their own reports. The roads are operated jointly as one whole.

13. Derived from rents for use of road and equipment, when leased	$25,000 00

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

1. Taxes, State and local: Paid by lessees.		
2. General expenses		8 40

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$24,991 60
2. Percentage of same to capital stock and net debt	.02⅝	
3. Percentage of same to total property and assets	.03¼	
4. Interest accrued during the year:		
On funded debt	$25,000 00	
On other debt	14,518 85	
Total		$39,518 85
7. Balance for the year, or deficit		$14,518 85
8. Deficit at commencement of the year	$220,436 68	
9. Deficit at commencement of the year, as changed by aforesaid entries		220,436 68
10. Total deficit December 31, 1880		$234,963 93

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$733,859 61
Profit and loss (loss)	234,963 93
Total	$968,843 54

Credits.

Capital stock	$234,500 00
Funded debt	500,000 00
Other debts—current expenses	234,343 00
Total	$968,843 54

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Rental		$25,000 00
Interest	$39,518 85	
General expenses	8 40	
Balance (loss)		14,527 25
	$39,527 25	$39,527 25

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use: From Stockton to Milton and Oakdale	February, 1871
3. Length of line with track laid, if road is not completed	32.6596 miles.
5. Branches owned by the company	1
Peters to Milton (single track)	11.9928 miles.
6. Total length of branches owned by the company	11.9928 miles.
10. Total length of road belonging to this company	44.6524 miles.

11. Aggregate length of siding and other tracks not enumerated above	3.2742 miles.
13. Aggregate length of track belonging to this company computed as single track	47.9266 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	4
18. Number of wooden bridges (aggregate length, 4,271 feet), in California	54
19. Number of crossings of highways at grade, in California	39
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	41
27. Number of railroad crossings at grade: Central Pacific Railroad, at Stockton	1
37. Number of stations on all roads owned by this company	12
41. Number of telegraph offices in company stations	4

ROLLING STOCK.

	No.	Average Weight.	Estimated Market Value.
1. Locomotives	3	48,233	
2. Tenders	3		
Average weight of tenders full of fuel and water		25,000	$24,000 00
Maximum weight of tenders full of fuel and water [30,000 lbs.]			
Average joint weight of engines and tenders		73,233	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [41 feet, 8 inches]			
4. Total length of heaviest engine and tender over all [49 feet, 8 inches]			
6. Passenger cars	3		14,000 00
Average weight		31,800	
Maximum weight [31,000 lbs.]			
7. Mail and baggage cars	1	32,000	2,000 00
8. Eight-wheel box freight cars	4	18,000	3,200 00
10. Eight-wheel platform cars	41	13,500	28,700 00
13. Total market value			$71,900 00

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	45

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TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of Bonds.	Date.	Due.	In what money payable. Interest and Principal.	Interest.		Authorized Amount.	Total Issued December 31, 1880.	Accrued Interest During Year.	Amount of Bonds Outstanding December 31, 1880.
				Rate.	Payable.				
First mortgage	Jan. 1, 1875	Jan. 1, 1905.	Gold coin.	5 per cent	Jan. 1 and July 1	$500,000	$500,000	$25,000	$500,000

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track December 31, 1880.					
			Single.	Length of Roadway—Single and Double Track.		Reduced to Single Track.		
						Sidings.	Track and Sidings.	
Main Line and Branches.	From—	To—	Iron.	Iron.	Iron and Steel.	Iron.	Iron.	Iron and Steel.
Main line within State	Stockton	Oakland	32.6596	32.6596	32.6596	2.9195	(b) 35.5791	35.5791
Branch	Peters	Milton	11.9928	11.9928	11.9928	0.3547	12.3475	12.3475
Total on whole road, December 31, 1880			44.6524	44.6524	44.6524	3.2742	47.9266	47.9266
Total constructed during year						0.1248	0.1248	0.1248

The length of rail is double the length of single track, column (b) above.	December 31, 1880—Within the State.			December 31, 1880—Within the State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rail	95.8532	39.2857	3765.66	0.2496	39.2857	9.8057

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TABLE D. GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

NOTE.—The contract for building the road stipulates that any donations or grants made to the company should revert to contractor, and he is authorized to receive them. No information of any such grants has been afforded whereby entries could be made in the books.

TABLE E. OTHER AIDS OR GRANTS, FROM THE UNITED STATES, STATES, COUNTIES, CORPORATIONS, OR INDIVIDUALS.

NOTE.—Lands granted to the company by Act of Congress, March 4, 1867, were restored to the public domain by Act dated June 15, 1874. None of the lands were patented to the company, nor did they make any sales.

STATE OF CALIFORNIA, City and County of San Francisco } ss.

Leland Stanford, President of the Stockton and Copperopolis Railroad Company, and James O'B. Gunn, of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

LELAND STANFORD.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth (15th) day of February, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

TERMINAL RAILWAY COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
C. P. Huntington, Vice-President	New York.
E. W. Hopkins, Treasurer	San Francisco.
W. E. Brown	San Francisco.
Charles Crocker	San Francisco.
E. H. Miller, Jr.	San Francisco.
Robert Robinson	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The Terminal Railway Company was incorporated January 30, 1867.

CAPITAL STOCK.

1. Capital stock authorized by charter	$4,000,000 00
2. Capital stock authorized by votes of company	4,000,000 00
3. Capital stock issued [number of shares, 275]; amount paid in	27,500 00
5. Total amount paid in, as per books of the company	27,500 00
8. Par value of shares issued	100 00
9. Total number of stockholders	9
10. Number of stockholders in California	8
11. Amount of stock held in California	20,700 00

DEBT.

14. Unfunded debt: Incurred for construction, equipment, or purchase of property; All other debts, current credit balances, etc.	3,696 67
16. Total gross debt liabilities	$3,696 67
18. Total net liabilities	$3,676 67

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

1. Grading and masonry	$31,196 67
2. Bridging	
3. Superstructure, including rails	
4. Land	
Land damages	
Fences	
5. Passenger and freight stations	
6. Engine houses, car sheds, and turn-tables	
7. Machine shops, including machinery and tools	
8. Interest	
9. Engineering	
Agencies, salaries, and other expenses during construction	
27. Whole amount of permanent investments	$31,196 67
31. Total property and assets of the company	$31,196 67

32. SINKING AND CONTINGENT FUNDS.

Showing amount of same, and their purpose.

No bonds issued.

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

NOTE.—This company has not completed any of its railroads, and has no part of it in operation, so that there are no further answers necessary to the sundry inquiries on the succeeding pages relating to operating the railroad.

20. Net addition to property account for the year	$14 50

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$31,196 67
Total	$31,196 67

Credits.

Capital stock	$27,500 00
Total	$31,196 67

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:
Not yet opened.

STATE OF CALIFORNIA, City and County of San Francisco } ss.

Leland Stanford, President of the Terminal Railway Company, and James O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

LELAND STANFORD.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth day of February, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

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VACA VALLEY AND CLEAR LAKE RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

A. M. Stevenson, President	Vacaville.
Leland Stanford, Vice-President	San Francisco.
Chas. Crocker	San Francisco.
J. O'B. Gunn, Secretary and Treasurer	San Francisco.
G. B. Stevenson, Superintendent	Vacaville.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The Vaca Valley and Clear Lake Railroad Company purchased the Vaca Valley Railroad, which was not incorporated.

CAPITAL STOCK.

1. Capital stock authorized by charter	$1,000,000 00
2. Capital stock authorized by votes of company	500,000 00
4. Capital stock paid in on shares not issued [number of shares, 5,000]	250,000 00
5. Total amount paid in as per books of the company	250,000 00
8. Par value of shares	100 00
9. Total number of stockholders	5
10. Number of stockholders in California	5
11. Amount of stock held in California	250,000 00

DEBT.

12. Funded debt as follows:	
Certificate of indebtedness, mortgage notes	$117,854 05
13. Total amount of funded debt	$117,854 05
14. Unfunded debt:	
All other debts, current credit balances, etc.	$38,031 94
15. Total amount of unfunded debt	$38,031 94
16. Total gross debt liabilities	$155,875 99
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:	
Other securities and debt balances	$6,234 01
18. Total net debt liabilities	$149,641 98

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

11. Total cost of construction (not segregated)	$148,689 30

Equipment.

	No.	Cost.
12. Locomotives	2	$15,000 00
16. Passenger cars	3	18,000 00
Baggage cars	1	3,000 00
17. Freight cars	15	10,000 00
Total for equipment	------	$46,000 00

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

Lands.

Town lots in Madison and Winters, value about	$6,000 00

Investments in Transportation Lines.

Purchase of the Vaca Valley Railroad—not an incorporated company	$250,000 00
26. Total for property purchased, etc.	$250,000 00
27. Whole amount of permanent investments (all in California)	210,689 30
30. Cash and cash assets	6,234 01
31. Total property and assets of the company	$466,923 31

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

8. Ballasting, and sundry expenditures	$3,970 24
19. Property sold and credited to property account during the year:	
Lots in town of Madison sold	760 00
20. Net addition to property account for the year	$3,210 24

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$6,964 89
5. Derived from express and extra baggage	1,249 57
6. Derived from mails	1,544 38
7. Total earnings from passenger department	$9,758 84
8. Derived from local freight on roads operated by this company	$38,181 17
11. Derived from other sources belonging to freight department	9,460 50
12. Total earnings from freight department	$47,641 67
14. Total transportation earnings	$57,400 51
15. Earnings per mile of road operated	$1,979 33
16. Earnings per train mile (total passenger and freight)	1 18

EXPENSES FOR OPERATING THE ROAD DURING THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$1,527 33
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	6,653 99
3. Insurance premiums and losses by fire, and damages for fires set by engines	564 25
5. Total	$8,748 57
6. Proportion belonging to passenger department	$1,487 25
7. Proportion belonging to freight department	7,261 32

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$17,571 09
2. Iron rails laid, deducting old rails taken up	
3. Steel rails laid, deducting old rails taken up	
5. Repairs of bridges	1,980 37
6. Repairs of buildings and fixtures (stations and turn-tables)	229 94
7. Repairs of and additions to machine shops and machinery	
8. Repairs of fences, road crossings, and signs	
10. Repairs of locomotives	2,176 73
14. Fuel for engines and cars:	
Number of cords of wood, 1,052; cost	5,001 25
17. Oil and waste	521 06
19. Total	$27,480 44
20. Proportion of same to passenger department	$4,671 67
21. Proportion of same to freight department	22,808 77

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Class III—Passenger traffic expenses.

As all trains are mixed (carrying both passengers and freight), the items called for in this class are included in those on page 16.

Class IV—Mixed traffic expenses.

1. Repairs of cars		$648 68
3. Damages and gratuities, freight		129 15
4. Salaries, wages, and incidentals of mixed trains		5,432 74
Salaries, wages, and incidentals of gravel trains		3,233 23
5. Salaries, wages, and incidentals of mixed stations		3,645 80
7. Amount paid other roads for balance of mileage of cars		582 50
Proportion passenger traffic	$2,324 25	
Proportion freight traffic	11,347 85	
		13,672 10
9. Total expenses of operating the road embraced in Classes I, II, III, and IV		$47,901 11
10. Per train mile (total passenger and freight)	$1 02½	
11. Percentage of expenses to total transportation earnings	87 per cent.	

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$7,449 40
2. Percentage of same to capital stock and net debt	.01 8/10	
3. Percentage of same to total property and assets	.01 6/10	
4. Interest accrued during the year:		
On funded debt	$13,666 34	
On other debt	136 10	
Total		13,802 44
7. Balance for the year, or deficit		6,303 04
8. Surplus at commencement of the year	$35,136 75	
Deduct entries made in profit and loss account during the year, not included in the foregoing statement	18,809 34	
9. Surplus at commencement of the year, as changed by aforesaid entries		16,327 41
10. Total surplus, December 31, 1880		10,024 37

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.*

1. Total earnings from Passenger Department, as per "Revenue for the Year," No. 7	$9,758 84
2. Per train mile	20
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	1,487 25
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	4,671 67
5. Expenses, "Traffic," as per Class III, No. 8	2,324 25
6. Total expenses	8,483 17
7. Per train mile	17½
8. Net earnings	1,275 67
9. Per train mile	02½

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.*

1. Total earnings from Freight Department, as per "Revenue for the Year," No. 12	$47,641 67
2. Per train mile	98
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	7,261 32
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 21	22,808 77
5. Expenses, "Traffic," as per Class IV, No. 8	11,347 85
6. Total expenses	41,417 94
7. Per train mile	85
8. Net earnings	6,223 73
9. Per train mile	13

*These items are carried out as called for on the report, but as all trains are mixed trains, they are nothing more than estimates of the actual cost.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$398,689 30
Cost of equipment	46,000 00
Cash, cash assets, and other items:	
Capital stock unpaid	250,000 00
Balance of current accounts	6,234 01
Total	$700,923 31

Credits.

Capital stock	$500,000 00
Funded debt	123,400 31
Other debts:	
Balance of current accounts	32,475 68
Bills payable:	
Subsidy payments	23,157 50
Town of Madison—Land sales	11,292 35
Town of Winters—Land sales	573 10
Profit and loss (profit)	10,024 37
Total	$700,923 31

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Freight		$38,181 17
Gravel freight		9,460 50
Passengers		6,964 89
Mail		1,544 38
Express		1,249 57
Operating expenses	$48,373 78	
Taxes	1,527 33	
Interest	13,802 44	
Balance loss		6,303 04
	$63,703 55	$63,703 55

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Elmira to Vacaville	Jan. 25, 1869.
From Vacaville to Winters	Aug. 26, 1875.
From Winters to Madison	May 1, 1875.
2. Length of main line of road from Elmira to Madison	29
11. Aggregate length of siding and other tracks not enumerated above	2
12. Same in California	2
13. Aggregate length of track belonging to this company computed as single track	31
14. Same in California	31
16. Number of spans of bridges of twenty-five feet and upwards, in California	4
18. Number of wooden bridges in California	18
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	20

ROADS BELONGING TO OTHER COMPANIES, ETC.

34. Total miles of road operated by this company	31
35. Total miles of road operated by this company in California	31
36. Number of stations on all roads operated by this company	6
37. Number of stations on all roads owned by this company	6
39. Miles of telegraph on line of road operated by this company	31
41. Number of telegraph offices in company stations	4
42. Number of telegraph stations operated by this company	4
43. Number of telegraph stations operated jointly by railroad and telegraph companies	2

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ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	2		
Average weight of engines in working order		48,000	$12,000 00
2. Tenders	2		
6. Passenger cars	3		10,000 00
7. Mail and baggage cars	1		2,500 00
8. Eight-wheel box freight cars	5	17,000	4,000 00
10. Eight-wheel platform cars	10	13,000	5,000 00
13. Total market value			$33,500 00

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	15
17. Number of passenger cars with Miller platform and buffer	3

MILEAGE, TRAFFIC, ETC.

1. Miles run by mixed trains	40,690
2. Rate of speed of mixed trains, including stops	15
8. Total train miles run	48,690
9. Total number of passengers carried:	
Number of through passengers going east (or north) towards Elmira	896
Number of through passengers going west (or south) contrary	900
Number of local passengers going east (or north) towards Elmira	2,452
Number of local passengers going west (or south) contrary	1,697
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	5 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	8 cents.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	8 cents.
18. Average rate of fare per mile received from passengers to and from other roads	8 cents.
20. Average rate of fare per mile for all passengers	8 cents.
21. Highest rate of freight per ton per mile for any distance	20 cents.
22. Lowest rate of freight per ton per mile for any distance	4¼ cents.
23. Average rate of local freight per ton per mile on roads operated by this company	7 cents.
24. Average rate of freight per ton per mile to and from other roads	7 cents.
25. Average rate of freight per ton per mile for all	7 cents.
26. Average number of cars in passenger trains (including baggage cars)	2
30. Number of persons regularly employed by company, including officers	20
Average monthly pay of employés, other than officers	$63 00
Average monthly pay of engine drivers	100 00
Average monthly pay of passenger conductors	100 00
Average monthly pay of freight conductors	65 00
Average monthly pay of baggage masters	50 00
Average monthly pay of brakemen, flagmen, and switchmen	50 00
Average monthly pay of section men	50 00
Average monthly pay of laborers	50 00

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track December 31, 1880.		
			Single.	Sidings.	Total.
Main Line and Branches.	From—	To—	Iron.	Iron.	
Main line within State	Elmira	Madison	29	2	31

The length of rail is double the length of single track.	December 31, 1880. Within State.		
	Length in Miles.	Average Weight per Mile (Tons).	Total. Weight (Tons).
Length of iron rail	62	40	2,480

TABLE D. GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

	Am't Realized.
Sundry individuals, year 1878, sundry dates	$23,157 50

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

A. M. Stevenson, President of the Vaca Valley and Clear Lake Railroad Company, and James O'B. Gunn, the Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

A. M. STEVENSON.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this nineteenth (19th) day of February, 1881.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

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VISALIA RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

R. E. Hyde, President	Visalia.
E. Jacobs, Vice-President	Visalia.
S. Sweet, Secretary	Visalia.
J. J. Mack, Treasurer	Visalia.

NAMES OF DIRECTORS:

R. E. Hyde	Visalia.
E. Jacobs	Visalia.
Solomon Sweet	Visalia.
John Cutler	Visalia.
James Fisher	Visalia.

BUSINESS ADDRESS OF THE COMPANY:

Visalia — Tulare County, California.

The Visalia Railroad Company was incorporated May 21, 1874.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$100,000 00
2.	Capital stock authorized by votes of company	100,000 00
4.	Capital stock paid in on shares not issued	82,025 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders	88
10.	Number of stockholders in California	88
11.	Amount of stock held in California	All.

DEBT.

13.	Total amount of funded debt	$255 10
17.	Materials and supplies on hand	$475 00

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

11.	Total cost of construction	$81,916 20

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

19. *Lands.*

Depot and land on which situated, in Visalia, Tulare County, California	$3,000 00

REVENUE FOR THE YEAR.

1.	Derived from local passengers on roads operated by this company	$4,338 80
4.	Derived from other sources belonging to passenger department	319 70
5.	Derived from express and extra baggage	432 22
7.	Total earnings from passenger department	$5,090 72
8.	Derived from local freight on roads operated by this company	$9,807 84
12.	Total earnings from freight department	$9,807 84
14.	Total transportation earnings	$14,898 56

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1.	Taxes, State and local	$462 99
2.	General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV.	8,579 49
3.	Insurance premiums and losses by fire, and damages for fires set by engines	128 50
5.	Total	$9,170 98

Class II—Maintenance of way and buildings, and movement expenses.

1.	Repairs of road (exclusive of bridges, new rails, and new ties)	$291 91
6.	Repairs of buildings and fixtures (stations and turn-tables)	479 37
10.	Repairs of locomotives	126 26
14.	Fuel for engines and cars: Number of cords of wood, 175; cost, $3 50	612 50
17.	Oil and waste	157 86
19.	Total	$1,702 90

Class IV—Freight traffic expenses.

6.	Paid corporations or individuals not operating roads for use of freight cars	903 90
13.	Total expenses	$903 90

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$81,916 20
Cost of equipment	26,700 00
Other investments	3,000 00
Supplies and materials on hand	475 00
Total	$112,091 20

Credits.

Capital stock	$82,025 00
Other debts (to Bank of Visalia)	255 10
Profit and loss (profit)	29,811 10
Total	$112,091 20

DESCRIPTION OF ROAD.

1.	Date when the road was opened for public use: From Goshen to Visalia	September, 1874
2.	Length of main line of road from Visalia to Goshen	7½ miles.
	Length of main line in California	7½ miles.
11.	Aggregate length of siding and other tracks not enumerated above	1 mile.
13.	Aggregate length of track belonging to this company computed as single track	8½ miles.

ROLLING STOCK.

		No.	Average Weight. (Tons).	Market Value.
1.	Locomotives	2	15	$7,500 00
	Average weight of engines in working order		15	
	Maximum weight of engines in working order [15 tons]			
6.	Passenger cars	1	6	4,500 00
	Average weight		6	
	Maximum weight [6 tons]			
7.	Mail and baggage cars	1	3	1,500 00
13.	Total market value			$13,500 00

MILEAGE, TRAFFIC, ETC.

1.	Miles run by passenger trains	29½ a day.
2.	Rate of speed of express passenger trains, including stops	20 miles.
3.	Rate of speed of accommodation trains, including stops	20 miles.
4.	Miles run by freight trains	20 miles.
5.	Rate of speed of express freight trains, including stops	20 miles.
6.	Rate of speed of accommodation freight trains, including stops	20 miles.
8.	Total train miles run	29½ a day.

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15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	10 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	10 cents.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	10 cents.
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	10 cents.
20. Average rate of fare per mile for all passengers	10 cents.
21. Highest rate of freight per ton per mile for any distance	$68\frac{2}{11}$ cents.
22. Lowest rate of freight per ton per mile for any distance	2 cents.
23. Average rate of local freight per ton per mile on roads operated by this company	41 cents.
24. Average rate of freight per ton per mile to and from other roads	41 cents.
25. Average rate of freight per ton per mile for all	41 cents.
26. Average number of cars in passenger trains (including baggage cars)	1
27. Average number of cars in freight trains—basis of eight-wheel	1
30. Number of persons regularly employed by company, including officers	7

STATE OF CALIFORNIA, County of Tulare. } ss.

R. E. Hyde, President of the Visalia Railroad Company, and Solomon Sweet, Secretary of the said company, being duly sworn, depose and say that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that, as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

R. E. HYDE, President.
SOLOMON SWEET, Secretary.

Subscribed and sworn to before me, this twelfth day of April, 1881.

JULIUS LEVY, Notary Public.

NARROW GAUGE ROADS.

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NARROW GAUGE ROADS.

BAY AND COAST RAILROAD COMPANY.

No report made by this company for the year ending December 31, 1880. The road is operated by the South Pacific Railroad Company, and the operations of the same for the year are included in the report of said company.

NEVADA COUNTY NARROW GAUGE RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

John C. Coleman, President	Grass Valley.
Edward Coleman, Vice-President	Grass Valley.
F. C. Beaty, Treasurer	Grass Valley.
George Fletcher, Secretary	Grass Valley.
John F. Kidder, General Superintendent	Grass Valley.

NAMES OF DIRECTORS:

John C. Coleman	Grass Valley.
Edward Coleman	Grass Valley.
James M. Lakeman	Grass Valley.
George D. McLean	Sweetland.
Niles Searls	Nevada City.
R. M. Hunt	Nevada City.
M. L. Marsh	Nevada City.

BUSINESS ADDRESS OF THE COMPANY:

Grass Valley ---------- Nevada County, California.

The Nevada County Narrow Gauge Railroad Company was incorporated April 4, 1874.

CAPITAL STOCK.

1. Capital stock authorized by charter		$400,000 00
2. Capital stock authorized by votes of company		400,000 00
3. Capital stock issued [number of shares, 2,422]; amount paid in		242,200 00
4. Capital stock paid in on shares not issued [number of shares, 18]		650 00
5. Total amount paid in as per books of the company		242,850 00
9. Total number of stockholders	149	
10. Number of stockholders in California	149	
11. Amount of stock held in California		242,200 00

DEBT.

12. Funded debt as follows:		
Bonds		$250,000 00
Interest paid on same during year	$20,000 00	
Certificates of indebtedness		5,500 00
Interest paid on same during year	$313 60	
13. Total amount of unfunded debt		$255,500 00
16. Total gross debt liabilities		255,500 00

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17. Amount of cash, materials, and supplies on hand, sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:		
Cash on hand		$2,372 58
Material and supplies on hand		7,785 25
Other securities and debt balances		935 64
		$11,093 47
18. Total net debt liabilities		$244,406 53

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	$239,333 69
2. Bridging	46,069 37
3. Superstructure, including rails	162,172 46
4. Land:	
Land damages	24,542 47
Fences	
5. Passenger and freight stations	9,277 90
6. Engine houses, car sheds, and turn-tables	6,425 16
7. Machine shops, including machinery and tools	7,540 53
9. Engineering	12,901 32
Agencies, salaries, and other expenses during construction	7,054 33
Section houses, tool, and other buildings	4,266 93
11. Total cost of construction	$519,584 16

Equipment.

	No.	Cost.
12. Locomotives	3	$27,904 28
15. Sleeping cars		7,612 32
16. Passenger cars	2	
Mail cars	2	6,216 76
Baggage cars (combination)	38	26,235 27
17. Freight cars	4	1,445 54
18. Total for equipment		$69,414 17

PROPERTY PURCHASED, ETC.

22. *Other Securities.*

	Nominal Amount.	Price Paid.
$9\frac{36}{100}$ shares of stock of Citizens' Bank, Nevada City, received in payment of fifty per cent of amount due from Bank of Nevada County at the time of its failure	$935 64	$935 64

26. Total for property purchased, etc.	$935 64
27. Whole amount of permanent investments	588,998 33
29. Amounts of supplies and materials on hand	7,785 25
30. Cash and cash assets	2,372 58
31. Total property and assets of the company	600,091 80

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry	$1,325 08
3. Superstructure, including rails	296 85
4. Land	472 96
5. Passenger and freight stations	871 65
6. Engine houses, car sheds, and turn-tables	101 80
7. Machine shops	2,148 21
14. Freight and other cars [Number, 2]	1,130 56
Total	$6,347 11
20. Net addition to property account for the year	$6,347 11

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$41,494 64
5. Derived from express and extra baggage	2,478 33
6. Derived from mails	1,131 12
7. Total earnings from passenger department	$45,104 09
8. Derived from local freight on roads operated by this company	$66,525 11
11. Derived from other sources belonging to freight department	4,026 35
12. Total earnings from freight department	$70,551 46
14. Total transportation earnings	$115,655 55
15. Earnings per mile of road operated	5,108 36
16. Earnings per train mile (total passenger and freight)	1 82
19. Total income derived from all sources	115,655 55

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$4,412 30
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	4,578 33
3. Insurance premiums and losses by fire, and damages for fires set by engines	436 48
5. Total	$9,427 11
6. Proportion belonging to passenger department	$3,696 90
7. Proportion belonging to freight department	5,730 21

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$10,560 27
2. Iron rails laid, deducting old rails taken up; weight per yard, 35 pounds	1,120 00
4. New ties (number, 6,000); cost	1,680 00
5. Repairs of bridges	2,231 93
6. Repairs of buildings and fixtures (stations and turn-tables)	540 49
7. Repairs of and additions to machine shops and machinery	536 59
8. Repairs of tunnels	3,757 88
10. Repairs of locomotives	3,649 30
14. Fuel for engines and cars—Number of cords of wood, 1,800; cost	6,475 00
15. Water and water stations	384 75
17. Oil and waste	1,196 92
19. Total	$32,133 13
20. Proportion of same to passenger department	$12,601 23
21. Proportion of same to freight department	19,531 90

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars	$3,516 22
3. Damages and gratuities, passengers	32 00
4. Salaries, wages, and incidentals of passenger trains	5,103 83
5. Salaries, wages, and incidentals of passenger stations	4,854 87
8. Total	$13,506 92

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Class IV—Freight traffic expenses.

1. Repairs of freight cars	$3,802 19
3. Damages and gratuities, freight	103 63
4. Salaries, wages, and incidentals of freight trains	8,296 57
5. Salaries, wages, and incidentals of freight stations	7,217 56
8. Total	$19,419 95
10. Per train mile (total passenger and freight)	1.17
11. Percentage of expenses to total transportation earnings	64 $\frac{49}{100}$
13. Total expenses	$74,487 11

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$41,168 44
2. Percentage of same to capital stock and net debt	8 $\frac{45}{100}$
3. Percentage of same to total property and assets	6 $\frac{36}{100}$
4. Interest accrued during the year:	
On funded debt	20,000 00
On other debt	313 60
8. Surplus at commencement of the year	20,854 84
10. Total surplus, December 31, 1880	102,391 80

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from passenger department, as per "Revenue for the Year," No. 7	$45,104 09
2. Per passenger train mile. Most trains being mixed	Cannot estimate.
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	3,696 90
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	12,610 23
5. Expenses, "Passenger Traffic," as per Class III, No. 8	13,506 92
6. Total expenses	29,806 05
7. Per passenger train mile	Cannot estimate.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year," No. 12	$70,551 46
2. Per freight train mile	Cannot estimate.
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	5,730 21
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 21	19,531 90
5. Expenses, "Freight Traffic," as per Class IV, No. 8	19,419 95
6. Total expenses	44,682 06
7. Per freight train mile	Cannot estimate.
8. Net earnings	25,869 40

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$519,584 16
Cost of equipment	69,414 17
Other investments	935 64
Supplies and materials on hand	7,785 25
Cash assets	2,372 58
Total	$600,091 80

Credits.

Capital stock	$242,200 00
Funded debt	250,000 00
Other debts	5,500 00
Profit and loss (profit)	102,391 80
Total	$600,091 80

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Gross earnings		$115,655 55
Operating and general expenses	$74,487 11	
Interest on first mortgage bonds	20,000 00	
Interest on floating debt	313 60	
Balance (profit)	20,854 84	
	$115,655 55	$115,655 55

DESCRIPTION OF ROAD.

1. Date when portions of the road were opened for public use:	
From Colfax to Grass Valley	April 17, 1876.
From Grass Valley to Nevada City	May 24, 1876.
2. Length of main line of road from Colfax to Nevada City	22 $\frac{64}{100}$ miles.
10. Total length of road belonging to this company (all in California)	22 $\frac{64}{100}$ miles.
11. Aggregate length of siding and other tracks not enumerated above	1 $\frac{46}{100}$ miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	5
18. Number of wooden bridges (aggregate length, 320 feet,) in California	2
19. Number of crossings of highways at grade, in California	19
20. Number of crossings of highways over railroad, in California	2
21. Number of crossings of highways under railroad, in California	1
23. Number of highway bridges less than eighteen feet above track, in California	1
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	22
29. Number of railroad crossings under other railroads:	
Central Pacific, at Long Ravine Bridge	1

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	3	36,000	$16,000 00
Maximum weight of engines in working order [18 tons]			
Maximum weight of tenders full of fuel and water [10 tons]			
Average joint weight of engines and tenders		56,000	
5. Snow plows			5,000 00
6. Passenger cars	2	22,000	
Maximum weight [11 tons]			
7. Mail and baggage cars (combination)	2	18,000	3,000 00
8. Eight-wheel box freight cars	18	11,000	8,000 00
10. Eight-wheel platform cars	20	7,000	6,000 00
12. Other cars	4		300 00
13. Total market value			$38,300 00

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	38
15. Number of locomotives equipped with train brakes—kind of brake:	
Westinghouse air brake	5
16. Number of cars equipped with train brakes—kind of brake:	
Westinghouse air brake	4
17. Number of passenger cars with Miller platform and buffer	4

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	10,027
2. Rate of speed of express passenger trains, including stops	11 $\frac{71}{100}$
3. Rate of speed of accommodation trains, including stops	11 $\frac{71}{100}$
4. Miles run by freight trains	11,978

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5. Rate of speed of express freight trains, including stops	10
6. Rate of speed of accommodation freight trains, including stops	10
7. Miles run by other trains, and for what purpose:	
Mixed trains, freight and passenger	40,893
Excursion	710
Service	3,251
8. Total train miles run	66,859
9. Total number of passengers carried	52,767
Number of through passengers going towards Colfax	8,058
Number of through passengers going in contrary direction	7,983
Number of local passengers going towards Colfax	17,857
Number of local passengers going in contrary direction	18,869
10. Total passenger mileage, or passengers carried one mile	548,822
11. Passenger mileage to and from other roads:	
Average number of miles traveled by each local passenger	8
Average number of miles traveled by each through passenger	19½
Average number of miles traveled by each passenger, through and local	12
12. Number of tons carried, not including gravel	24,809
Number of tons of each class of freight produced in this State, carried:	
Flour, grain, and fuel	5,445
Hay	885
Lumber and wood	8,476
Fruit	325
Powder, hides, pelts, sundries	1,000
13. Total freight mileage, or tons carried one mile	379,365
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	5½ cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	$5\frac{81}{100}$ cents.
18. Average rate of fare per mile received from passengers to and from other roads	10 cents.
20. Average rate of fare per mile for all passengers	$8\frac{14}{100}$ cents.
21. Highest rate of freight per ton per mile for any distance	20 cents.
Under seven miles	25 cents.
22. Lowest rate of freight per ton per mile for any distance	3¾ cents.
25. Average rate of freight per ton per mile for all	$16\frac{89}{100}$ cents.
26. Average number of cars in passenger trains (including baggage cars)	$2\frac{13}{100}$
27. Average number of cars in freight trains—basis of eight-wheel	3
28. Average weight of passenger trains, including locomotives and tenders, in working order (exclusive of passengers)	$48\frac{1340}{2000}$ tons.
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	42½ tons.
30. Number of persons regularly employed by company, including officers	56
Average monthly pay of employés, other than officers	$64 25
Average monthly pay of engine drivers	111 25
Average monthly pay of passenger conductors	100 00
Average monthly pay of freight conductors	90 00
Average monthly pay of baggage masters	75 00
Average monthly pay of brakemen, flagmen, and switchmen	65 00
Average monthly pay of section men	52 00
Average monthly pay of mechanics in shops	91 00
Average monthly pay of laborers	52 00

LIST OF ACCIDENTS IN CALIFORNIA.

Employés killed (from own misconduct or carelessness)	1
Brakeman fell from engine while uncoupling; broke his leg, and died from the effects, after amputation.	

TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Date.	Due.	In what Money Payable. Principal and Interest.	Interest.		Authorized Amount.	Total Issued December 31, 1880.	Accrued Interest.		Amount of Bonds Outstanding December 31, 1880.
				Rate.	Payable.			To Dec. 31, 1880.	During Year.	
First mortgage	Jan. 11, 1876.	Jan. 11, 1896.	Gold coin.	8 per cent.	Jan. and July.	$325,000	*$250,000	$93,147	$20,000	$250,000

* $11,000 issued as collateral security for loan of $5,500.

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.	From—	To—	Length of Track, December 31, 1880. Single.	Length of Roadway—Single and Double Track.	Reduced to Single Track. Track.	Reduced to Single Track. Sidings.	Reduced to Single Track. Track and Sidings.
			Iron.	Iron.	Iron.	Iron.	Iron.
Main Line and Branches							
Main line within State	Colfax	Nevada City	22.64	22.64	22.64	1.45	(a) 24.09
Total on whole road, December 31, 1880			22.64				

The length of rail is double the length of single track, column (b) above.	December 31, 1880—Within State. Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rail	47.98	27.1120	1,319.1058

STATE OF CALIFORNIA, County of Nevada. } ss.

John F. Kidder, Superintendent of the Nevada County Narrow Gauge Railroad Company, and George Fletcher, Secretary and Auditor of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing twenty-one sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

JOHN F. KIDDER.
GEORGE FLETCHER.

Subscribed and sworn to before me, this fourteenth day of February, 1881.

WM. K. SPENCER,
Notary Public.

NORTH PACIFIC COAST RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

John W. Doherty, President ..... San Francisco.
J. McM. Shafter ..... San Francisco.
W. Dutton ..... San Francisco.
Delos Lake ..... San Francisco.
W. W. Waddell ..... San Francisco.
W. R. Price ..... San Francisco.
W. F. Russell ..... San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

No. 328 Montgomery Street ..... San Francisco, California.

The North Pacific Coast Railroad Company was incorporated December 16, 1871.

CAPITAL STOCK.

1. Capital stock authorized by charter	$3,000,000 00
2. Capital stock authorized by votes of company	3,000,000 00
3. Capital stock issued [number of shares, 250,000]; amount paid in	2,500,000 00
5. Total amount paid in as per books of the company	2,500,000 00
8. Par value of shares issued	100 00
9. Total number of stockholders	20
10. Number of stockholders in California	20

DEBT.

14. Unfunded debt:	
Incurred for construction, equipment, or purchase of property	$1,513,050 00
All other debts, current credit balances, etc.	606,318 40
15. Total amount of unfunded debt	$2,119,368 40
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:	
Cash on hand	$5,594 16
Materials and supplies on hand	2,934 00
Other securities and debt balances	74,992 40
Total	$83,520 56
18. Total net debt liabilities	$2,035,847 84

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

Not kept separately.

11. Total cost of construction and equipment	$2,800,000 00

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Equipment.

Not kept separately.

PROPERTY PURCHASED.

27. Whole amount of permanent investments	$2,800,000 00
28. Property in California	2,800,000 00
29. Amount of supplies and materials on hand	2,934 00
30. Cash and cash assets	83,520 56
31. Total property and assets of the company	$2,886,454 56

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company		$128,039 92
2. Derived from passengers from and to other roads, over road operated by this company		3,583 12
5. Derived from express and extra baggage		12,542 89
6. Derived from mails		4,868 32
7. Total earnings from passenger department		$149,034 25
8. Derived from local freight on roads operated by this company		$117,906 89
12. Total earnings from freight department		$117,906 89
14. Total transportation earnings		$266,941 14
15. Earnings per mile of road operated	91¼	2,925 33
16. Earnings per train mile (total passenger and freight)	$230,593 00	1 16
17. Income derived from rent of property, other than road and equipment, specifying same:		
Charter	$2,762 96	
Towage	103 00	
Rents	4,177 00	
Privilege of selling fruit, papers, etc., and use of scales	1,219 62	
		8,262 58
19. Total income derived from all sources		$275,203 72

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local: Included in profit and loss.	
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
General office } Salaries {	$12,262 52
Superintendent } Salaries {	6,687 46
Incidentals	986 59
Rents	4,428 00
Legal services	2,851 15
Stationery and printing	1,405 91
Advertising	2,395 75
Injuries to live stock	122 75
	$31,140 13
3. Insurance premiums and losses by fire, and damages for fires set by engines	273 00
5. Total	$31,413 13
6. Proportion belonging to passenger department	$16,904 44
7. Proportion belonging to freight department	14,508 69

(Equal division, except advertising.)

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$28,997 43
5. Repairs of bridges	3,325 88
6. Repairs of buildings and fixtures (stations and turn-tables)	497 88
7. Repairs of and additions to machine shops and machinery	872 62
8. Repairs of fences, road crossings, and signs	106 90
10. Repairs of locomotives (⅓ $763 92) + $254 64	3,278 15
12. Repairs of wharves	1,439 44
14. Fuel for engines and cars: Number of cords of wood, 3,478; cost, $13,912 — Number of tons of coal, 3,536 $\frac{1824}{2240}$; cost for ferry steamers, $27,-127 87	41,039 87
15. Water and water stations	1,174 75
19. Total	$82,062 89
20. Proportion of same to passenger department	$50,864 89
21. Proportion of same to freight department	31,198 00

(Equal division, except as to fuel.)

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars		$3,750 75
3. Damages and gratuities, passengers		100 00
4. Salaries, wages, and incidentals of passenger trains		12,362 48
Salaries, wages, and incidentals of ferries		25,865 03
5. Salaries, wages, and incidentals of passenger stations		9,788 92
8. Total		$51,867 18

Class IV—Freight traffic expenses.

1. Repairs of freight cars		$2,120 75
Repairs of dump and work cars		182 41
3. Damages and gratuities, freight		211 35
4. Salaries, wages, and incidentals of freight trains	$9,449 14	
Salaries, wages, and incidentals of ferries	13,096 30	
		22,545 44
5. Salaries, wages, and incidentals of freight stations		9,788 92
8. Total		$34,848 87
9. Total expenses of operating the road embraced in Classes I, II, III, and IV		$200,192 07
13. Total expenses		$200,192 07

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$75,011 65
2. Percentage of same to capital stock and debt	$2\frac{26}{100}$
3. Percentage of same to total property and assets	$2\frac{58}{100}$

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from passenger department, as per "Revenue for the Year," No. 7	$149,034 25
2. Per passenger train mile	1 02
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	16,904 44
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	50,864 87
5. Expenses, "Passenger Traffic," as per Class III, No. 8	51,867 18
6. Total expenses	119,636 51
7. Per passenger train mile	82
8. Net earnings	29,397 74
9. Per passenger train mile	20

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RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year," No. 12	$117,906 89
2. Per freight train mile	1 38
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	14,508 69
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 21	31,198 00
5. Expenses, "Freight Traffic," as per Class IV, No. 8	34,848 87
6. Total expenses	80,555 56
7. Per freight train mile	94
8. Net earnings	37,351 33
9. Per freight train mile	44

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road, Cost of equipment, Other investments		$2,800,000 00
Supplies and materials on hand: live stock, $1,420; fuel, $1,514		2,934 00
Cash, cash assets, and other items:		
Agents	$3,044 18	
Cash	5,594 16	
Sundry persons	71,948 22	
		80,586 56
Profit and loss (loss)		522,797 84
Total		$3,406,318 40

Credits.

Capital stock	$1,286,950 00
Other debts:	
Bills payable	1,894,816 24
Sundry persons	224,552 16
Total	$3,406,318 40

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
By earnings		$275,203 72
To operating expenses	$200,292 07	
To interest and discount	44,448 49	
To sundries	60,071 27	

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Saucelito to Tomales	Jan. 11, 1875.
From Tomales to Howard's	Oct. 16, 1876.
From Howard's to Tyrone	April 2, 1877.
From Tyrone to Duncan's	May 15, 1877.
2. Length of main line of road from San Francisco to Duncan's	80½ miles.
5. Branches owned by the company	2 miles.
6. Total length of branches owned by the company	2 miles.
7. Total length of branches owned by the company in California	2 miles.
10. Total length of road belonging to this company	87¾ miles.
11. Aggregate length of siding and other tracks not enumerated above	9¾ miles.
12. Same in California	All.
13. Aggregate length of track belonging to this company computed as single track	All single.
14. Same in California	All.
16. Number of spans of bridges of twenty-five feet and upwards, in California	13
18. Number of wooden bridges (aggregate length, 1,651 feet,) in California	13
19. Number of crossings of highways at grade, in California	26

ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY UNDER LEASE OR CONTRACT.

30. *Names, description, and length of each.*

Name of Company.	Termini. From—	Termini. To—	Length (Miles).	Dates of Lease. From—	Dates of Lease. To—
San Rafael and San Quentin Railroad Company	San Rafael	San Quentin	3½	Mar. 11, 1875	Mar. 11, 1918.

Amount of rental: One dollar per annum.

31. Total length of above roads	3½ miles.
32. Total length of above roads in California	3½ miles.
34. Total miles of road operated by this company	91¼ miles.
35. Total miles of road operated by this company in California	91¼ miles.
36. Number of stations on all roads operated by this company	39
37. Number of stations on all roads owned by this company	37
38. Same in California	All.
39. Miles of telegraph on line of road operated by this company	79¾
41. Number of telegraph offices in company stations	14
42. Number of telegraph stations operated by this company	14
43. Number of telegraph stations operated jointly by railroad and telegraph companies	14

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	12		$72,000 00
Average weight of engines in working order		43,170	
2. Tenders	12		
Average weight of tenders full of fuel and water		22,580	
Average joint weight of engines and tenders		65,750	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [38 feet]			
4. Total length of heaviest engine and tender over all [42 feet]			
6. Passenger cars	16		48,000 00
Average weight		12,000	
7. Mail and baggage cars	3	11,000	4,500 00
8. Eight-wheel box freight cars	30	10,000	12,000 00
10. Eight-wheel platform cars	270	8,000	81,000 00
12. Other cars	1	16,000	5,000 00
13. Total market value			$222,500 00

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	300
15. Number of locomotives equipped with train brakes—kind of brake: Westinghouse air brake	4
16. Number of cars equipped with train brakes—kind of brake: Westinghouse air brake	16
17. Number of passenger cars with Miller platform and buffer	16

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	145,398
2. Rate of speed of express passenger trains, including stops	15 miles.
3. Rate of speed of accommodation trains, including stops	10 miles.
4. Miles run by freight trains	85,195

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6. Rate of speed of accommodation freight trains, including stops	10 miles.
7. Miles run by other trains, and for what purpose:	
Gravel trains	14,985
8. Total train miles run	245,578
9. Total number of passengers carried	370,591
Number of passengers going north	182,035
Number of passengers going south	188,556
10. Total passenger mileage, or passengers carried one mile	No statistics.
11. Average number of miles traveled by each local passenger	No statistics.
Average number of miles traveled by each through passenger	No statistics.
Average number of miles traveled by each passenger, through and local	No statistics.
12. Number of tons freight carried (not including gravel)	47,119
Number of tons freight in this State, carried	47,119
Number of tons freight produced in this State, carried	No statistics.
13. Total freight mileage, or tons carried one mile	No statistics.
15. Highest rate of fare per mile for any distance (excluding one mile)	$8\frac{56}{100}$ cents.
16. Lowest rate of fare per mile for any distance (single fare)	$3\frac{1}{3}$ cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	No statistics.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	No statistics.
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	$\frac{6}{10}$ cents.
20. Average rate of fare per mile for all passengers	No statistics.
21. Highest rate of freight per ton per mile for any distance	$46\frac{2}{3}$ cents.
23. Average rate of local freight per ton per mile on roads operated by this company	No statistics.
25. Average rate of freight per ton per mile for all	No statistics.
Average rate of freight per ton per mile, products of this State	No statistics.
Average rate of freight per ton per mile, products of other States	No statistics.
26. Average number of cars in passenger trains (including baggage cars)	4
27. Average number of cars in freight trains—basis of eight-wheel	20
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	104,000 pounds.
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	226,000 pounds.
30. Number of persons regularly employed by company, including officers	271
Average monthly pay of employés, other than officers	$37 00
Average monthly pay of engine drivers	120 00
Average monthly pay of passenger conductors	90 00
Average monthly pay of freight conductors	85 00
Average monthly pay of baggage masters	60 00
Average monthly pay of brakemen, flagmen, and switchmen	60 00
Average monthly pay of section men	70 00
Average monthly pay of mechanics in shops	90 00
Average monthly pay of laborers	24 00

Relating to Passengers.

1. Total season ticket passengers (round trip): See question 4; commutation tickets sold between San Francisco and San Rafael only.	
2. Passengers to San Francisco (including season)	171,536
3. Passengers from San Francisco (including season)	163,595
4. Season ticket passengers to and from San Francisco (one round trip daily)	118,600

LIST OF ACCIDENTS IN CALIFORNIA.

Employés injured (from causes beyond their own control, in California)	1

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.

Main Line and Branches.	From—	To—	Length of Track, December 31, 1880.									
			Single.		Reduced to Single Track.							
					Track.		Sidings.		Track and Sidings.			
			Length in Miles.	Iron.	Length in Miles.	Iron.	Length in Miles.	Iron.	Length in Miles.	Iron.	Average Weight per Mile.	Total Weight (Tons.)
Main line within the State	Sausalito Junction	Duncans San Rafael	74½		76¼		9¾		(b) 86			
The length of rail is double the length of single track, column (b) above.			December 31, 1880.									
			152½								42½	7,310
			Total.									
Length of iron rail												

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TABLE D. GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

Interest Accrued to Company.	During Year		Nothing.
Disposed of.	Discount		$15,792
	Cash Realized		$144,208
	Amount of Bonds		$160,000
Total Amount of Bonds or Cash			$160,000
Interest Payable.	Rate		7
	When		Semi-annually.
	By Whom		Marin County.
Bonds.	Due		May 5, 1896.
	Date		May 5, 1876.
	Character of		County.

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

John W. Doherty, President of the North Pacific Coast Railroad Company, and W. F. Russell, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

JOHN W. DOHERTY, President.
W. F. RUSSELL, Secretary.

Subscribed and sworn to before me, this thirty-first day of January, 1881.

THOS. H. HOLT,
Notary Public.

OAKLAND TOWNSHIP RAILROAD COMPANY.

No report made by this company for the year ending December 31, 1880. The road is operated by the South Pacific Coast Railroad Company, and the operations of the same for the year are included in the report of said company.

SAN LUIS OBISPO AND SANTA MARIA VALLEY RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

John Rosenfeld, President	San Francisco.
A. Blockman, Vice-President	San Francisco.
John O'Farrell, Managing Director	San Francisco.
George C. Perkins, Treasurer	San Francisco.
W. H. Knight, Secretary	Oakland.

NAMES OF DIRECTORS:

John Rosenfeld	San Francisco.
John Harford	Port Harford.
John O'Farrell	San Francisco.
C. Nelson	San Francisco.
F. S. Wensinger	San Francisco.
George C. Perkins	San Francisco.
A. Blockman	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

No. 10 Market Street ---- San Francisco, California.

The San Luis Obispo and Santa Maria Valley Railroad Company was incorporated April 22, 1875.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$500,000 00
2.	Capital stock authorized by votes of company	500,000 00
3.	Capital stock issued [number of shares, 295]; amount paid in	149,000 00
5.	Total amount paid in as per books of the company	131,163 75
6.	Amount of capital stock issued but not full paid	17,836 07
7.	Amount per share still due thereon	Various.
8.	Par value of shares issued	500 00
9.	Total number of stockholders	35
10.	Number of stockholders in California	35
11.	Amount of stock held in California (all that is issued)	149,000 00

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DEBT.

12. Funded debt as follows:		
Bonds		$120,000 00
Interest paid on same during year	$9,600 00	
Certificates of indebtedness		15,000 00
Interest paid on same during year	2,730 48	
13. Total amount of funded debt		$120,000 00
14. Unfunded debt:		
Incurred for construction, equipment, or purchase of property		$15,000 00
All other debts, current credit balances, etc.		1,700 23
15. Total amount of unfunded debt		$16,700 23
16. Total gross debt liabilities		$136,700 23
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:		
Materials and supplies on hand		$35,409 00
Bills receivable		17,836 07
Current balances in agent's hands		1,513 48
Total		19,703 64
18. Total net debt liabilities		$117,096 59

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	$43,573 01
2. Bridging and trestlework	18,087 15
3. Superstructure, including rails	99,195 35
4. Land	1,411 25
Fences	1,630 70
6. Engine houses, car sheds, and turn-tables	12,359 94
7. Railroad wharf and approach	17,143 37
8. Interest	15,857 76
9. Engineering	13,721 44
Agencies, salaries, and other expenses during construction	6,806 49
11. Total cost of construction	$229,786 46

Equipment.

	No.	Cost.
12. Locomotives	2	$16,310 74
16. Passenger cars	1	3,000 00
17. Freight cars	34	14,582 79
Other cars	4	581 76
18. Total for equipment		$34,470 29

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

19. *Lands.*

"Harford Property," including right of way, road-bed, and old franchise	$30,021 60

25. *Other property purchased.*

26. Total for property purchased, etc.	$30,021 60
27. Whole amount of permanent investments	294,283 35
28. Property in California	294,283 35
29. Amount of supplies and materials on hand	354 09
30. Cash and cash assets	19,349 55
31. Total property and assets of the company	313,986 99

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

3. Superstructure, including rails	$192 00
Land damages	94 58
14. Freight and other cars [10]	3,251 79
15. Hand car [1]	125 00
17. Blacksmith shop and tools	354 09
18. Total	$4,017 46
19. Property sold and credited to property account during the year:	
Superstructure and old rails sold	$388 47
Fencing posts sold	286 88
20. Net addition to property account for the year	3,342 11

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$2,142 25
7. Total earnings from passenger department	$2,142 25
8. Derived from local freight on roads operated by this company	$29,805 59
12. Total earnings from freight department	$29,805 59
14. Total transportation earnings	$32,947 84
18. Income derived from all other sources (including accretions from sinking funds, investments in stock, bonds, steamboat property, transportation lines, etc.):	
Wharfage, drainage, etc., and commissions attending business Pacific Coast Steamship Company	21,417 14
Storage	132 15
19. Total income derived from all sources	$53,497 13

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$1,739 63
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
Salaries of Secretary and Managing Director	850 00
Train expenses, payroll, engineer, conductor, brakeman, oil and waste, and one half salary of Superintendent	3,903 15
Station expenses, salary station agent, laborers, oil, coals, etc.	4,717 84
Repairs to Port Harford wharf	1,207 46
General expenses, advertising, stationery, damages, etc.	443 88
5. Total	$12,861 96
6. Proportion belonging to passenger department	Cannot state.
7. Proportion belonging to freight department	Cannot state.

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties, and track service)	$4,179 68
5. Repairs of bridges	759 19
6. Repairs of buildings and fixtures (stations and turn-tables)	32 19
10. Repairs of locomotives, and all running stock, cars, etc.	818 85
14. Fuel for engines and cars:	
Number of cords of wood, ——; cost	$1,402 75
19. Total	$20,054 62

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Class IV—Freight traffic expenses.

12. Amount paid other companies as rent for use of road, specifying each company, the amount and basis on which rent is computed:		
Rent of People's wharf		$1,500 00
Expense of railroad wharf, salary of agent, laborers, fuel, oil, etc.		4,440 05
13. Total expenses		$25,994 62

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$27,502 46
4. Interest accrued during the year:	
On funded debt	$9,600 00
On other debt	2,730 48
Total	$12,330 48
7. Balance for the year, or surplus	$15,171 98
8. Surplus at commencement of the year	13,114 78
10. Total surplus, December 31, 1880	$28,286 76

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from passenger department, as per "Revenue for the Year," No. 7	$2,142 25

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year," No. 12	$29,805 59

NOTE—Questions and statement for pages 13, 14, 15, 16, and 17. This road is short. Trains run irregular—depending upon arrival and departure of steamers at Port Harford. Passenger and freight cars are mixed trains; one locomotive serves for freight and passenger traffic, one conductor, brakeman, etc., for all; only two stations beside the terminus at wharf; fuel, oil, and waste for both freight and passenger—hence the difficulty of segregating the expense of freight and passenger business. The expenses of the railroad wharf are charged to wharf; the receipts and expenses of the wharf are entered in the operating expenses of the road, and it is difficult to determine the percentage of expenses to the total transportation earnings.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road		$229,786 46
Cost of equipment		34,475 29
Other investments		30,021 63
Supplies and material on hand		354 09
Bills receivable	$17,836 07	
Balance in hands of agents	1,513 48	
		19,349 55
Total		$313,986 99

Credits.

Capital stock		$149,000 00
Funded debt		120,000 00
Other debts		15,000 00 1,700 00
Profit and loss (profit)		28,286 76
Total		$313,986 99

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Railroad wharf, wharfinger, dockage, etc		$21,417 14
Freight receipts		29,805 59
Passenger receipts		2,142 25
Storage		132 15
Railroad wharf expenses	$4,440 05	
Repairs to railroad wharf	1,207 46	
Repairs to rolling stock	818 85	
Repairs to buildings	32 19	
Repairs to track, and track service	4,179 68	
Repairs to bridges	759 19	
Train expenses	3,903 15	
Station expenses	4,717 84	
Fuel account	1,402 75	
Salaries, Secretary and Managing Director	850 00	
People's wharf lease	1,500 00	
Taxes	1,739 63	
General expense	443 88	
Interest	12,330 48	
Profit and loss	15,171 98	
	$53,497 13	$53,497 13

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use: From Port Harford to San Luis Obispo	Sept., 1877
2. Length of main line of road from Harford to San Luis Obispo	10.67 miles.
Length of main line in California	10.67 miles.
10. Total length of road belonging to this company	10.67 miles.
11. Aggregate length of siding and other tracks not enumerated above	1.03 miles.
12. Same in California	1.03 miles.
13. Aggregate length of track belonging to this company computed as single track	11.70 miles.
14. Same in California	11.70 miles.
18. Number of wooden bridges (aggregate length, 145 feet) in California	1

ROADS BELONGING TO OTHER COMPANIES.

34. Total miles of road operated by this company	10.70
35. Total miles of road operated by this company in California	10.70
36. Number of stations on all roads operated by this company	3
37. Number of stations on all roads owned by this company	3
38. Same in California	3
41. Number of telegraph offices in company stations	1

ROLLING STOCK.

1. Locomotives:	
Baldwin locomotive and tender (44,000 lbs.)	1
Tank locomotive (weight, 14,000 lbs.)	1
15. Number of locomotives equipped with train brakes	1

MILEAGE, TRAFFIC, ETC.

2. Rate of speed of express passenger trains, including stops (mixed trains)	15 miles per hour.
5. Rate of speed of express freight trains, including stops (mixed trains)	15 miles per hour.
6. Rate of speed of accommodation freight trains, including stops	15 miles per hour.
15. Highest rate of fare per mile for any distance (excluding one mile)	8 cents.
16. Lowest rate of fare per mile for any distance (single fare)	7 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	7¼ cents.
20. Average rate of fare per mile for all passengers	7½ cents.
21. Highest rate of freight per ton per mile for any distance	30 cents.
22. Lowest rate of freight per ton per mile for any distance	15 cents.

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

Length of Track, December 31, 1880.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Single.	Length of Roadway—Single and Double Track.	Reduced to Single Track.			
					Track.	Sidings.	Track and Sidings.	
Main Line and Branches.	From—	To—	Iron.	Iron.	Iron.	Iron.	Iron.	Iron and Steel.
Main line within State	Port Harford	San Luis Obispo	10.67	10.67	10.67	1.03	(b) 11.70	11.70
Total on whole road, December 31, 1880			10.67	10.67	10.67	1.03	11.70	11.70

The length of rail is double the length of single track, column (b) above.

	December 31, 1880.			
	Within the State.			
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).	
Length of iron rails	23.40	33	77.22	

STATE OF CALIFORNIA, County of San Luis Obispo. } ss.

John Rosenfeld, President of the San Luis Obispo and Santa Maria Valley Railroad Company, and W. H. Knight, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

JOHN ROSENFELD.
W. H. KNIGHT.

Subscribed and sworn to before me, this thirteenth day of May, 1881.

L. MEININGER,
Notary Public.

SANTA CRUZ RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

F. A. Hihn, President.....Santa Cruz.
Amasa Pray, Secretary.....Santa Cruz.
S. J. Lynch, Treasurer.....Santa Cruz.
R. C. Kirby.....Santa Cruz.
John Brazer.....Santa Cruz.
Samuel Drennan.....Santa Cruz.
Titus Hale.....Santa Cruz.

BUSINESS ADDRESS OF THE COMPANY:

Santa Cruz Railroad Company.....Santa Cruz, California.

The Santa Cruz Railroad Company was incorporated June 3, 1873.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$1,000,000 00
2.	Capital stock authorized by votes of company	1,000,000 00
3.	Capital stock issued [number of shares, 5,095½]; amount paid in	210,150 00
4.	Capital stock paid in on shares not issued [number of shares, 10]	405 19
5.	Total amount paid in, as per books of the company	201,555 19
8.	Par value of shares issued	100 00
9.	Total number of stockholders.....92	
10.	Number of stockholders in California.....92	
11.	Amount of stock held in California	All.

DEBT.

12.	Funded debt as follows:	
	Bonds	$125,000 00
	Accrued interest and remaining unpaid	41,525 00
13.	Total amount of funded debt	$166,525 00
14.	Unfunded debt:	
	Incurred for construction, equipment, or purchase of property	$58,200 00
	All other debts, current credit balances, etc.	9,703 53
15.	Total amount of unfunded debt	67,903 00
16.	Total gross debt liabilities	$234,428 53

17. Amount of cash, materials, and supplies on hand; sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:

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Cash on hand	$1,286 24
Materials and supplies on hand	459 37
Other securities and debt balances	2,179 63
18. Total net debt liabilities	$230,503 29

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	$134,786 92
2. Bridging	66,875 47
3. Superstructure, including rails	130,385 24
4. Land	15,392 75
Land damages	16,509 80
Fences	12,780 50
5. Passenger and freight stations	16,420 41
6. Engine houses, car sheds, and turn-tables	3,230 05
7. Machine shops, including machinery and tools	2,812 10
8. Interest	106,447 15
9. Engineering	9,975 80
Agencies, salaries, and other expenses during construction	29,320 02
Discount on mortgage and county bonds	34,690 00
11. Total cost of construction	$579,626 21

Equipment.

12. Locomotives	$21,606 41
16. Passenger cars	11,694 48
Baggage cars	800 00
17. Freight cars	15,193 18
Other cars	950 00
Materials	831 96
18. Total for equipment	$51,076 03

24. *Investments in transportation lines.*

	Nominal Amount.	Price Paid.
Investment in City Railroad Company	$5,172 75	$5,172 75

25. Other property purchased:	
26. Total for property purchased, etc.	$5,172 75
27. Whole amount of permanent investments	630,702 25
28. Property in California	All.
29. Amount of supplies and materials on hand	459 37
30. Cash and cash assets	3,465 87
31. Total property and assets of the company	639,800 24

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry	$499 52
2. Bridging	203 15
3. Superstructure, including rails	240 50
Land damages	100 00
Fences	96 80
5. Passenger and freight stations	2,186 50
8. Engineering, agencies, salaries, and other expenses during construction	32 61
15. Material	747 99
17. Any other expenditures charged to property account:	
Litigation expenses	829 24
Interest	22,273 18
20. Net addition to property account for the year	$27,209 49

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$8,116 69
2. Derived from passengers from and to other roads, over roads operated by this company	6,572 84
5. Derived from express and extra baggage	1,323 73
6. Derived from mails	999 92
7. Total earnings from passenger department	$17,013 18
8. Derived from local freight on roads operated by this company	$9,961 62
10. Derived from freight from and to other roads on joint tariff	4,231 00
11. Derived from other sources belonging to freight department	2,032 99
12. Total earnings from freight department	$16,226 11
14. Total transportation earnings	$33,239 29
15. Earnings per mile of road operated	$1,570 40
16. Earnings per train mile (total passenger and freight)	1 42
18. Income derived from all other sources (including accretions from sinking funds, investments in stock, bonds, steamboat property, transportation lines, etc.):	
Profit and loss	9 97
19. Total income derived from all sources	$33,249 26

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes—State and local	$1,618 30
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	5,259 00
5. Total	$6,877 30
6. Proportion belonging to passenger department	No separate account kept, as mostly mixed trains were run.
7. Proportion belonging to freight department	

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$7,650 32
5. Repairs of bridges	675 80
6. Repairs of buildings and fixtures (stations and turn-tables)	159 60
8. Repairs of fences, road crossings, and signs	10 00
10. Repairs of locomotives	176 80
14. Fuel for engines and cars:	
Number of cords of wood, 600; cost	2,172 32
15. Water and water stations	192 00
17. Oil and waste	347 82
19. Total	$11,384 66
20. Proportion of same to passenger department	See remark at No. 6 and 7, Class I.
21. Proportion of same to freight department	
22. Of the above there was expended for other than ordinary repairs	$1,936 24

Class III—Passenger traffic expenses.

1. Repairs of cars	$1,337 06
4. Salaries, wages, and incidentals of passenger trains	6,474 72
5. Salaries, wages, and incidentals of passenger stations	2,611 77
8. Total	$10,423 55

Class IV—Freight traffic expenses.

9. Total expenses of operating the road embraced in Classes I, II, III, and IV	$28,685 51
10. Per train mile (total passenger and freight)	$1 23
11. Percentage of expenses to total transportation earnings	86 per cent.
13. Total expenses	$28,685 51

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NET INCOME, DIVIDENDS, ETC.

1. Total net income	$4,563 75
4. Interest accrued during the year:	
On funded debt	$12,500 00
On other debt	9,773 00
Total	$22,273 18

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$579,626 21
Cost of equipment	51,076 03
Other investments	5,172 75
Supplies and materials on hand	459 37
Cash, cash assets, and other items	3,465 87
Total	$639,800 23

Credits.

Capital stock	$201,555 19
Funded debt	166,525 00
Other debts	67,903 53
Subsidy from Santa Cruz County	114,000 00
Paid in on assessment levied April 10, 1878	25,150 00
Paid in on assessment levied March 12, 1879	270 00
Profit and loss (profit, not including interest)	64,396 51

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
Total income		$33,249 26
Operating expenses	$28,685 51	
Interest	22,273 18	
Loss		17,709 42
Totals	$50,958 69	$50,958 69

DESCRIPTION OF ROAD.

1. Date when the road was opened for public use	May 18, 1876.
2. Length of main line of road from Santa Cruz to Pajaro	$21\frac{165}{1000}$ miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	7
18. Number of wooden bridges (aggregate length, 5,285 feet) in California	27
19. Number of crossings of highways at grade, in California	14
20. Number of crossings of highways over railroad, in California	1
21. Number of crossings of highways under railroad, in California	2
23. Number of highway bridges less than eighteen feet above track, in California	1
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	17
27. Number of railroad crossings at grade:	
Crossings of Santa Cruz and Felton Railroad	2

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	3		$7,500 00
Average weight of engines in working order		15½ tons.	
Maximum weight of engines in working order [2-2 1-5 tons]			
2. Tenders	3		
Average weight of tender full of fuel and water		6½ tons.	
Maximum weight of tenders full of fuel and water [2-8 1-8 tons]			
Average joint weight of engines and tenders		21 5-6 tons.	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [35 feet]			
4. Total length of heaviest engine and tender over all [44 feet]			
6. Passenger cars	6		4,500 00
Average weight		6 tons.	
Maximum weight		10 tons.	
7. Mail and baggage cars	1	4½ tons.	300 00
8. Eight-wheel box freight cars	4	4½ tons.	1,100 00
10. Eight-wheel platform cars	25	3½ tons.	5,000 00
12. Other cars	7	350 lbs.	200 00
13. Total market value			$18,600 00

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	29
15. Number of locomotives equipped with train brakes—kind of brake:	
Westinghouse air brake	1
16. Number of cars equipped with train brakes—kind of brake:	
Westinghouse air brake	6
17. Number of passenger cars with Miller platform and buffer	2

N. B.—There is no market value for second-hand equipments; the estimate is based on what it ought to be worth.

MILEAGE, TRAFFIC, ETC.

2. Rate of speed of express trains, including stops	20 miles.
3. Rate of speed of accommodation freight trains, including stops	14 miles.
4. Miles run by other trains, and for what purpose (grading and gravel trains)	560
9. Total number of passengers carried	23,370
Number of through passengers going east (or north) towards San Francisco	19,052
Number of through passengers going west (or south) towards Santa Cruz	4,412
Number of local passengers going east (or north) towards Pajaro	4,633
Number of local passengers going west (or south) towards Santa Cruz	4,975
10. Total passenger mileage, or passengers carried one mile	5,032
11. Passenger mileage to and from other roads	361,137
12. Number of tons freight carried (not including gravel)	13,827
Number of tons freight in this State, carried	13,827
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	5 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	7½ cents.
20. Average rate of fare per mile for all passengers	6 cents.
21. Highest rate of freight per ton per mile for any distance	15 cents.
22. Lowest rate of freight per ton per mile for any distance	4 cents.
23. Average rate of local freight per ton per mile on roads operated by this company	9½ cents.
24. Average rate of freight per ton per mile to and from other roads	8½ cents.
25. Average rate of freight per ton per mile for all	9 cents.
26. Average number of cars in passenger trains (including baggage cars)	4
27. Average number of cars in freight trains—basis of eight-wheel	5½
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	60 tons.

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29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	46 tons.
30. Number of persons regularly employed by company, including officers	22
Average monthly pay of employés, other than officers	$64 00
Average monthly pay of engine drivers	120 00
Average monthly pay of passenger conductors	90 00
Average monthly pay of freight conductors	90 00
Average monthly pay of baggage masters	76 00
Average monthly pay of brakemen, flagmen, and switchmen	58 00
Average monthly pay of section men	48 00
Average monthly pay of mechanics in shops	55 00
Average monthly pay of laborers	45 50
Relating to Passengers.	
2. Passengers to San Francisco (including season)	2,992
3. Passengers from San Francisco (including season)	2,756

TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Series	Date.	Due.	In what money payable—Int'st and Principal	Interest. Rate.	Interest. Payable.	Authorized Amount.	Total Issued — December 31, 1880	Accrued Interest. To Dec. 31, '80	Accrued Interest. During Year	Accrued Interest. Overdue.	Am't of Bonds Outstanding December 31, 1880
First mortgage	1	Aug. 18, 1875	Dec. 1, 1880	Gold coin	10	Semi-annually	$125,000	All.	$41,525	$12,500	$41,525	$125,000

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

			Length of Track and Siding, December 31, 1880.		
			Single.	Siding.	Track and Sidings.
Main Line and Branches.	From—	To—	Iron.	Iron.	Iron.
Main line within State	Santa Cruz	Pajaro	21.165	1.878	23.038

	December 31, 1880.		
	Within the State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rail	23.038	53½ tons.	1,233

TABLE D.

Grants or Donations, in Bonds or Money, from States, Counties, Towns, Corporations, or Individuals, not Repayable by Company.

Bonds.			Interest Payable.			Total Amount of Bonds or Cash	Disposed of.		
Character of.	Date.	Due.	By Whom.	When.	Rate.		Amount of Bonds.	Cash Realized.	Discount.
County bonds	Feb. 23, 1876	Within 20 years	Santa Cruz County	Semi-annually	7 per cent.	$30,000			
County bonds	March 1, 1876	Within 20 years	Santa Cruz County	Semi-annually	7 per cent.	84,000	$114,000	$104,310	$9,690

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STATE OF CALIFORNIA,
County of Santa Cruz. } ss.

F. A. Hihn, who was during the year 1880 President of the Santa Cruz Railroad Company, and G. Ruegg, of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

F. A. HIHN.
G. RUEGG.

Subscribed and sworn to before me, this fourteenth day of February, 1881.

JAMES O. WANZER,
Notary Public.

SANTA CRUZ AND FELTON RAILROAD COMPANY.

No report made by this company for the year ending December 31, 1880. The road is operated by the South Pacific Coast Railroad Company, and the operations of the same for the year are included in the report of said company.

SAN RAFAEL AND SAN QUENTIN RAILROAD COMPANY.

No report made by this company for the year ending December 31, 1880. The road is operated by the North Pacific Coast Railroad Company, and the operations of the same for the year are included in the report of said company.

SONOMA VALLEY RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

Peter Donahue, President	San Francisco.
Thos. W. Johnston, Secretary	San Francisco.
R. H. Lloyd, Treasurer	San Francisco.

NAMES OF DIRECTORS:

Peter Donahue	San Francisco.
James M. Donahue	San Francisco.
R. H. Lloyd	San Francisco.
Arthur Hughes	San Francisco.
Thos. W. Johnston	San Francisco.
Thomas Donahue	San Francisco.
J. P. Agnew	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

No. 426 Montgomery Street ---- San Francisco, California.

The Sonoma Valley Railroad Company was incorporated ———, 18—, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

Names of Railroad Companies.	Dates of Incorporation.
Sonoma Valley Railroad Company	July 1, 1878.
Prismoidal Railroad Company	

CAPITAL STOCK.

1. Capital stock authorized by charter	$200,000 00
2. Capital stock authorized by votes of company	200,000 00
3. Capital stock issued; amount paid in	200,000 00
8. Par value of shares issued	100 00
9. Total number of stockholders	8
10. Number of stockholders in California	8
11. Amount of stock held in California	200,000 00
14. Unfunded debt: Incurred for construction, equipments, or purchases of property; All other debts, current credit balances, etc.	161,382 23

OFFICE OF THE SONOMA VALLEY RAILROAD COMPANY,
426 MONTGOMERY STREET, SAN FRANCISCO, February 15, 1881.

The Sonoma Valley Railroad Company had only between six and seven miles of road laid prior to August 16, 1880, when it was opened for traffic from its point of departure on San Pablo Bay to the town of Sonoma. The company is therefore unable to furnish the data asked for in the annual report of the Board of Railroad Commissioners.

THOS. W. JOHNSTON, Secretary.

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Peter Donahue, President of the Sonoma Valley Railroad Company, and Thomas W. Johnston, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

P. DONAHUE, President,
THOS. W. JOHNSTON, Secretary.

Subscribed and sworn to before me, this fourth day of March, 1881.

OTIS V. SAWYER,
Notary Public.

SOUTH PACIFIC COAST RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

A. E. Davis, President	San Francisco.
A. E. Davis, Treasurer	San Francisco.
Joseph Clark, Vice-President	San Francisco.
F. W. Bowen, Superintendent	San Francisco.
George Waggoner, Secretary	San Francisco.

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NAMES OF DIRECTORS:

A. E. Davis	San Francisco.
Edward Barron	San Francisco.
Joseph Clark	San Francisco.
Daniel Cook	San Francisco.
Isaac E. James	Virginia City.
J. Barr Robertson	San Francisco.
Cary Peebles	Santa Clara.

BUSINESS ADDRESS OF THE COMPANY:

Market Street Wharf — San Francisco, California.

The South Pacific Coast Railroad Company was incorporated March 29, 1876, and not formed by consolidation with any other companies.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$1,000,000 00
2.	Capital stock authorized by votes of company	1,000,000 00
3.	Capital stock issued [number of shares, 1,000]; amount paid in	1,000,000 00
5.	Total amount paid in as per books of the company	1,000,000 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders	7
10.	Number of stockholders in California	6

DEBT.

14.	Unfunded debt: Incurred for construction, equipment, or purchase of property; All other debts, current credit balances, etc.	$2,915,476 50
15.	Total amount of unfunded debt	2,915,476 50
17.	Amount of cash, materials, and supplies on hand; sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:	
	Cash on hand	$14,934 89
	Material and supplies on hand	43,982 39
	Other securities and debt balances	307,333 14
		$366,250 42
18.	Total net debt liabilities	$2,549,226 08

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1.	Grading and masonry		$379,995 15
2.	Bridging		121,288 17
3.	Superstructure, including rails		409,903 65
	Land damages, right of way	$60,065 07	
	Fences	20.401 79	
			80,466 86
5.	Passenger and freight stations		44,273 23
6.	Engine houses, car sheds, and turn-tables		13,196 06
7.	Machine shops, including machinery and tools		31,266 95
9.	Engineering		51,015 60
	Agencies, salaries, and other expenses during construction		152,630 09
	Tunneling		418,564 37
11.	Total cost of construction		$1,702,600 13

Equipment.

		No.	Cost.
12.	Locomotives	10	$82,551 45
14.	Parlor cars	2	9,970 02
16.	Passenger cars	38	120,634 85
17.	Freight cars	255	121,382 42
	Other cars	65	5,980 62
	Steamers	3	461,067 68
18.	Total for equipment		$801,587 04

26.	Total for property purchased, etc	$2,504,187 17
27.	Whole amount of permanent investments	
29.	Amount of supplies and materials on hand	43,982 39
30.	Cash and cash assets	322,268 03
31.	Total property and assets of the company	$2,870,437 59

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1.	Grading and masonry	$39,902 60
2.	Bridging	9,357 65
3.	Superstructure, including rails	8,511 74
4.	Fences	2,996 03
5.	Woodsheds and water stations	25,176 87
7.	Machine shops	5,080 27
8.	Engineering, agencies, salaries, and other expenses during construction	9,413 94
	Tunneling	56,621 27
9.	Locomotives [Number, 2]	18,267 47
11.	Parlor cars [Number, 2]	9,970 02
13.	Passenger, mail, and baggage cars [Number, 20]	36,305 75
14.	Freight and other cars [Number, 70]	40,950 80
15.	Improvements of steamers	3,210 61
	Total	$264,765 02
20.	Net addition to property account for the year	$264,765 02

REVENUE FOR THE YEAR.

1.	Derived from local passengers on roads operated by this company	$195,470 56
5.	Derived from express and extra baggage	2,524 55
6.	Derived from mails	167 15
7.	Total earnings from passenger department	$198,162 26
8.	Derived from local freight on roads operated by this company	188,306 80
13.	Derived from rents for use of road and equipment when leased	188,306 80
14.	Total transportation earnings	$386,469 06
17.	Income derived from rent of property other than road and equipment	$3,482 00
18.	Income derived from all other sources:	
	Wharfage, storage, and sundry items too numerous to mention here	7,423 27
	Telegraph receipts	2,933 41
19.	Total income derived from all sources	$400,307 74

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1.	Taxes—State and local	$18,162 08
2.	General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	20,308 95
	Advertising	6,733 55
	Injuries to persons	92,662 33
	Stationery and printing	3,763 08
	Rents	2,507 00
	Legal services	5,887 05
	Repairs of tunnels	1,678 19
	Repairs of machinery and tools	836 91
4.	Telegraph expenses	2,208 52
5.	Total	$154,747 66

Class II—Maintenance of way and buildings, and movement expenses.

1.	Repairs of road (exclusive of bridges, new rails, and new ties)	$69,020 50
5.	Repairs of bridges	6,002 21
6.	Repairs of buildings and fixtures (stations and turn-tables)	1,409 65
8.	Repairs of fences, road crossings, and signs	189 86
10.	Repairs of locomotives	9,824 95

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14. Fuel for engines and cars: Number of cords of wood; Number of tons of coal	Charged where they belong as locomotive, steamer, and ferry service.
15. Water and water stations	
16. Fuel for stations and shops	
17. Oil and waste	
18. Switchmen, watchmen, flag and signalmen	
19. Total	$86,439 17

Class III—Passenger and freight traffic expenses.

1. Repairs of passenger, mail, baggage, and freight cars	$10,320 05
3. Damages and gratuities, passengers	1,216 06
4. Salaries, wages, and incidentals of passenger trains	80,757 52
Salaries, wages, and incidentals of ferries	106,127 81
5. Salaries, wages, and incidentals of passenger stations	37,884 74
8. Total	$236,306 17

Class IV—Freight traffic expenses.

9. Total expenses of operating the road embraced in Classes I, II, III, and IV	$477,493 00
13. Total expenses	$477,493 00

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$1,702,600 13	
Cost of equipment	801,587 04	
		$2,504,187 17
Supplies and materials on hand		43,982 39
Cash, cash assets, and other items		14,934 89
Sundry balances		307,333 14
Profit and loss (loss)		77,185 26
Total		$2,947,622 85

Credits.

Capital stock	$1,000,000 00
Other debts: Due Treasurer	1,870,286 92
Sundry balances	45,189 58
Profit and loss (profit) January 1, 1880	32,146 35
Total	$2,947,622 85

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1880.

	Debits.	Credits.
January 1, 1880, balance		$33,146 35
Revenue		400,307 74
Expenditures	$477,493 00	
Balance, December 31, 1880		45,038 91
	$477,493 00	$477,493 00

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use: From Dumbarton Point to Los Gatos	June 1, 1878.
From Los Gatos to Alma	August 1, 1878.
From Alma to Wright's	May 1, 1879.
From Wright's to junction at Fulton	May 15, 1880.
2. Length of main line of road from Dumbarton Point to junction at Felton	49.66
Length of main line in California	All.
10. Total length of road belonging to this company	49.66
11. Aggregate length of siding and other tracks not enumerated above	6

12. Same in California	All.
13. Aggregate length of track belonging to this company, computed as single track	55.66
14. Same in California	All.
16. Number of spans of bridges of twenty-five feet and upwards, in California	9
18. Number of wooden bridges, in California	9
19. Number of crossings of highways at grade, in California	30
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	30
27. Number of railroad crossings at grade: At Santa Clara, crossing the Southern Pacific Railroad	1

ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY UNDER LEASE OR CONTRACT.

30. *Name, Description, and Length of each.*

Name of Company.	Termini. From—	Termini. To—	Length (Miles).
Bay and Coast Railroad	Alameda Point	Newark	24 1/10
Santa Cruz and Felton R. R.	Junction at Felton	Santa Cruz	7 1/10

NOTE.—No terms agreed upon yet.

31. Total length of above roads	31 2/10
32. Total length of above roads in California	All.
34. Total miles of road operated by this company	80.8
35. Total miles of road operated by this company in California	All.
36. Number of stations on all roads operated by this company	34
37. Number of stations on all roads owned by this company	12
38. Same in California	All.
39. Miles of telegraph on line of road operated by this company	142½
41. Number of telegraph offices in company stations	10
42. Number of telegraph stations operated by this company	23
43. Number of telegraph stations operated jointly by railroad and telegraph companies	23

ROLLING STOCK.

	No.	Average Weight.
1. Locomotives	10	
Average weight of engines in working order		21 tons.
Maximum weight of engines in working order		25 tons.
2. Tenders	10	
Average weight of tenders full of fuel and water		10 tons.
Maximum weight of tenders full of fuel and water		12½ tons.
Average joint weight of engines and tenders		31 tons.
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender	[38.8 feet]	
4. Total length of heaviest engine and tender over all	[46.8 feet]	
6. Passenger cars	33	
Maximum weight		9 tons.
7. Mail and baggage cars	7	8½ tons.
8. Eight-wheel box freight cars	45	5 tons.
10. Eight-wheel platform cars	210	4½ tons.
12. Other cars and trucks	65	

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	255
15. Number of locomotives equipped with brakes—kind of brake: Westinghouse air	All.
16. Number of cars equipped with train brakes—kind of brake: Westinghouse air	40
17. Number of passenger cars with Miller platform and buffer	40

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MILEAGE, TRAFFIC, ETC.

1.	Miles run by passenger trains	191,881
2.	Rate of speed of express passenger trains, including stops	20 miles.
3.	Rate of speed of accommodation trains, including stops	20 miles.
4.	Miles run by freight trains	
5.	Rate of speed of express freight trains, including stops	12 miles.
6.	Rate of speed, accommodation freight trains, including stops	12 miles.
7.	Miles run by other trains, and for what purpose:	
	Mixed	17,466
	Switching	9,287
	Work	36,061
		63,814
8.	Total train miles run	330,411
9.	Total number of passengers carried	668,011
	Number of through passengers going east (or north)	5,637
	Number of through passengers going west (or south)	5,020
	Number of local passengers going east (or north)	316,648
	Number of local passengers going west (or south)	340,780
10.	Total passenger mileage, or passengers carried one mile	9,615,545
11.	Passenger mileage to and from other roads:	
	Average number of miles traveled by each local passenger	13.44
	Average number of miles traveled by each through passenger	73.30
	Average number of miles traveled by each passenger, through and local	14.40
12.	Number of tons freight in this State, carried	119,396
13.	Total freight mileage, or tons carried one mile	3,670,845
15.	Highest rate of fare per mile for any distance (excluding one mile)	7.20 cents.
16.	Lowest rate of fare per mile for any distance (single fare)	0.50 cents.
17.	Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	2.45 cents.
	Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	3.30 cents.
19.	Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	0.63 cents.
20.	Average rate of fare per mile for all passengers	2.03 cents.
21.	Highest rate of freight per ton per mile for any distance	15 cents.
22.	Lowest rate of freight per ton per mile for any distance	3 cents.
23.	Average rate of local freight per ton per mile on roads operated by this company	8 cents.
25.	Average rate of freight per ton per mile for all	8 cents.
	Average rate of freight per ton per mile, products of this State	8 cents.
26.	Average number of cars in passenger trains (including baggage cars)	5
27.	Average number of cars in freight trains—basis of eight-wheel	25
28.	Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	78 tons.
29.	Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	140 tons.
30.	Number of persons regularly employed by company, including officers	300
	Average monthly pay of employés, other than officers	$100 00
	Average monthly pay of engine drivers and firemen included	90 00
	Average monthly pay of passenger conductors	100 00
	Average monthly pay of freight conductors	100 00
	Average monthly pay of baggage masters	65 00
	Average monthly pay of brakemen, flagmen, and switchmen	60 00
	Average monthly pay of section men	45 00
	Average monthly pay of mechanics in shops	90 00
	Average monthly pay of laborers	45 00

Relating to Passengers.

1.	Total season ticket passengers (round trip)	108,413
2.	Passengers to San Francisco (including season)	291,548
3.	Passengers from San Francisco (including season)	320,568
4.	Season ticket passengers to and from San Francisco (one round trip daily)	107,772

LIST OF ACCIDENTS IN CALIFORNIA.

	From causes beyond their own control—in California.		From their own misconduct or carelessness—in California.		Total on whole road operated.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers	15	50		1	15	51
Employés			2	3	2	3
Others				2		2
Totals	15	50	2	6	17	56

STATEMENT OF EACH ACCIDENT IN CALIFORNIA.

March 10—A Chinaman injured by jumping from the train while in motion.

May 10—A man was struck by a corner of a tender; slightly injured; was under influence of liquor.

May 23—Accident to an excursion train; fifteen killed and fifty injured; cause, derailment caused by expansion.

July 12—An employé, while attempting to jump from the train while in motion, was pulled under the car, mashing one foot badly; liquor the cause.

August 29—A boy twelve years old was struck by the engine while attempting to cross the track; spine injured.

August 30—An employé had his thumb split.

September 29—A brakeman had his leg crushed while coupling cars; died twenty-four hours after amputating the limb.

October 11—A man slightly injured while attempting to jump from the train while it was in motion.

December 22—An employé was drowned while on duty as deck-hand; he was missed on the night of the twenty-second, and the following morning his body was found between the fenders and wharf.

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track December 31, 1880.					
			Single.	Length of Roadway—Single and Double Track.	Reduced to Single Track.			
					Track.	Sidings.	Track and Sidings.	
	From—	To—	Iron.	Iron.	Iron.	Iron.	Iron.	
Main Line and Branches								
Main line within State	Dumbarton Point.	Junction at Felton	49.66	49.66	49.66	6	(b) 55.66	
Total on whole road December 31, 1880			49.66					

The length of rail is double the length of single track, column (b) above.	December 31, 1880—Within the State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rail	111.32	39.28	4,372$\frac{3}{4}$

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

A. E. Davis, President of the Sonth Pacific Coast Railroad Company, and George H. Waggoner, Secretary of the said company, being duly sworn, depose and say that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1880.

A. E. DAVIS, President.
GEO. H. WAGGONER, Secretary.

Subscribed and sworn to before me, this sixteenth day of February, 1881.

EDWARD CHATTIN,
Notary Public.

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REPORTS

OF

Railroad Companies for the Year 1881.

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REPORTS OF RAILROAD COMPANIES

TO THE BOARD OF RAILROAD COMMISSIONERS, FOR YEAR ENDING DECEMBER 31, 1881.

NOTE.—In the Reports of the several companies herein contained, all inquiries in the blank form of Report which were left unanswered by the companies respectively have been omitted, both for economy of space and greater clearness.

AMADOR BRANCH RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
C. P. Huntington, Vice-President	New York.
George Crocker, Treasurer	San Francisco.
Charles Crocker	San Francisco.
W. V. Huntington	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ---- California.

The Amador Branch Railroad Company was incorporated July 3, 1875.

CAPITAL STOCK.

1. Capital stock authorized by charter		$675,000 00
2. Capital stock authorized by votes of company		675,000 00
3. Capital stock issued [number of shares, 6,750]; amount paid in		675,000 00
5. Total amount paid in as per books of the company		675,000 00
8. Par value of shares issued		100 00
9. Total number of stockholders	12	
10. Number of stockholders in California	11	
11. Amount of stock held in California		648,000 00

DEBT.

12. Funded debt as follows:		
Bonds		675,000 00
Interest paid on same during year	$40,500	
13. Total amount of funded debt		$675,000 00
14. All other debts, current credit balances, etc		$20,250 00
16. Total gross debt liabilities		695,250 00
17. Amount of cash, materials, and supplies on hand, sinking funds in hands of trustees, and securities and debt balances, as represent cash assets:		
Other securities and debt balances		$1,638 77
18. Total net debt liabilities		$676,611 23

COST OF CONSTRUCTION.

11. Total cost of construction	$1,355,998 48

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EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry	$351 54
4. Fences	385 41
Total	$736 95
19. Property sold and credited to property account during the year, specifying same	$736 95
20. Net addition to property account for the year	736 95

REVENUE FOR THE YEAR.

13. Derived from rents for use of road and equipment when leased	$42,000 00
Less general expenses	5 70
Net revenue	$41,994 30

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$41,994 30
2. Percentage of same to capital stock and net debt	.03
3. Percentage of same to total property and assets	.03
4. Interest accrued during the year:	
On funded debt	40,500 00
7. Balance for the year, or surplus	1,494 30
8. Surplus at commencement of the year	2,892 95
9. Surplus at commencement of the year, as changed by aforesaid entries	2,892 95
10. Total surplus December 31, 1880	4,387 25

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$1,355,998 48
Cash, cash assets, and other items	18,638 77
Total	$1,374,637 25

Credits.

Capital stock	$675,000 00
Funded debt	675,000 00
Other debts	20,250 00
Profit and loss (profit)	4,387 25
Total	$1,374,637 25

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Rental		$42,000 00
Interest	$40,500 00	
Expenses	5 70	
Profit	1,494 30	
	$42,000 00	$42,000 00

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Galt to Ione	December 4, 1876.
2. Length of main line of road from Galt to Ione	27.2000 miles.
Length of main line in California	27.2000 miles.
3. Length of line with track laid, if road is not completed	Completed.
4. Length of double track on main line	Completed.
10. Total length of road belonging to this company	27.2000 miles.
11. Aggregate length of siding and other tracks not enumerated above	2.3420 miles.
12. Same in California	29.5420 miles.

13. Aggregate length of track belonging to this company computed as single track	29.5420 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	3
18. Number of wooden bridges (aggregate length, 2,057 feet) in California	41
19. Number of crossings of highways at grade, in California	16
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	16
37. Number of stations on all roads owned by this company	4
40. Miles of telegraph owned by this company	27
41. Number of telegraph offices in company stations	1

MILEAGE, TRAFFIC, ETC.

Included in lessee's report.

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12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of	Date	Due	In What Money Payable.		Interest.		Authorized Amount.	Total Issued.	Accrued Interest.	Amount of Bonds Outstanding Dec. 31, 1881.
			Interest.	Principal.	Rate.	Payable.		Dec. 31, 1881.	During Year.	
1st mortgage.	Jan. 1, 1877.	Jan. 1, 1907.	Gold.	Gold.	6	Jan. & July.	$675,000 00	$675,000 00	$40,500 00	$675,000 00

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1881.						
			Single.	Length of Roadway—Single and Double Track.		Reduced to Single Track.			
						Track.	Sidings.	Track and Sidings.	
Main Line and Branches	From—	To—	Iron.	Iron.	Iron and Steel.	Iron.	Iron.	Iron.	Iron and Steel.
Main line within State	Galt	Ione	27.2000	27.2000	27.2000	27.2000	2.3420	(b) 29.5420	29.5420
Total on whole road, December 31, 1881			27.2000						

The length of rail is double the length of single track, column (b) above.	December 31, 1881—Within the State.		
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons.)
Length of iron rail	59.0840	44	2,599.6960

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STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Leland Stanford, President of the Amador Branch Railroad Company, and James O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two sheets, have been compiled and prepared by the proper offices of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

LELAND STANFORD.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth (15) day of March, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

BERKELEY BRANCH RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
C. P. Huntington, Vice-President	New York.
George Crocker, Treasurer	San Francisco.
C. F. Crocker	San Francisco.
Timothy Hopkins	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ---- California.

The Berkeley Branch Railroad Company was incorporated September 25, 1876.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$100,000 00
2.	Capital stock authorized by votes of company	100,000 00
3.	Capital stock issued [number of shares, 1,000]; amount paid in	100,000 00
5.	Total amount paid in as per books of the company	100,000 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders ---- 10	
10.	Number of stockholders in California ---- 9	
11.	Amount of stock held in California	76,800 00

DEBT.

12.	Funded debt as follows:		
	Bonds		100,000 00
	Interest paid on same during year	$6,000	
13.	Total amount of funded debt		$100,000 00
14.	Unfunded debt:		
	All other debts, current credit balances, etc		$6,821 61
16.	Total gross debt liabilities		$106,821 61
17.	Amount of cash, materials, and supplies on hand, sinking funds in hands of trustees, and securities and debt balances, as represent cash assets:		
	Sinking funds		$2,000 00
18.	Total net debt liabilities		$104,821 61

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

11.	Total cost of construction	$207,375 00
27.	Whole amount of permanent investments	207,375 00
31.	Total property and assets of the company	207,375 00

32. SINKING AND CONTINGENT FUNDS, SHOWING AMOUNT OF SAME AND THEIR PURPOSE.

Applicable to Redemption of what Bonds.	Total to December 31, 1881.
Character.	Invested.
First mortgage	$2,000 00

REVENUE FOR THE YEAR.

Report of Central Pacific Railroad Company's lessees.

13.	Derived from rents for use of road and equipment when leased	$9,216 00
	Less general and miscellaneous expenses	43 45
		$9,172 55

NET INCOME, DIVIDENDS, ETC.

1.	Total net income	$9,172 55
2.	Percentage of same to capital stock and net debt	.04^{47}
3.	Percentage of same to total property and assets	.04^{42}
4.	Interest accrued during the year:	
	On funded debt	6,000 00
7.	Balance for the year, or surplus	3,172 55
8.	Deficit at commencement of the year	619 16
9.	Deficit at commencement of the year, as changed by aforesaid entries	619 16
10.	Total surplus December 31, 1881	2,553 39
11.	Paid to sinking funds, in hands of Trustees	2,000 00

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

Reported by lessees.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

Reported by lessees.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1880.

Debits.

Cost of road	$207,375 00
Sinking funds in hands of Trustees	2,000 00
Total	$209,375 00

Credits.

Capital stock	$100,000 00
Funded debt	100,000 00
Other debts	6,821 61
Profit and loss (profit)	2,553 39
Total	$209,375 00

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PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Rent		$9,216 00
Interest	$6,000 00	
Expenses	43 45	
Profit	3,172 55	
	$9,216 00	$9,216 00

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Shell Mound to Berkeley	August 16, 1876.
To Berryman's	July 1, 1878.
2. Length of main line of road from Shell Mound to Berryman's	3.8363 miles.
Length of main line in California	3.8363 miles.
3. Length of line with track laid, if road is not completed	Completed.
10. Total length of road belonging to this company	3.8363 miles.
11. Aggregate length of siding and other tracks not enumerated above	0.4978 miles.
12. Same in California	0.4978 miles.
13. Aggregate length of track belonging to this company computed as single track	4.3341 miles.
14. Same in California	4.3341 miles.
15. Total length of steel rail in tracks belonging to this company, not including steel top rail (weight per yard, fifty pounds)	6.4614 miles.
18. Number of wooden bridges (aggregate length, forty-seven feet), in California	1
19. Number of crossings of highways at grade, in California	11
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	11

ROADS BELONGING TO OTHER COMPANIES, ETC.

37. Number of stations on all roads owned by this company	2

MILEAGE, TRAFFIC, ETC.

Included in lessee's report.

STATEMENT OF EACH ACCIDENT IN CALIFORNIA.

Included in lessee's report.

TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Date.	Due.	In what Money Payable. Interest and Principal.	Interest. Rate.	Interest. Payable.	Authorized Amount.	Total Issued December 31, 1881.	Accrued Interest During Year.	Amount of Bonds outstanding December 31, 1881.
First mortgage	Jan. 1, 1877.	Jan. 1, 1907.	Gold coin.	6 per cent.	January and July.	$100,000	$100,000	$6,000	$100,000.

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1881.													
			Single.		Reduced to Single Track.											
					Length of Roadway—Single and Double Track.			Track.		Sidings.		Track and Sidings.				
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Steel.	Iron.	Steel.	Iron and Steel.		
Main line within State	Shell Mound	Berryman's	0.8599	-------	0.8599	2.9764	3.8363	0.8599	2.9799	0.2435	0.2543	(b) 1.1034	(c) 3.2307	4.3341		
Total on whole road, December 31, 1881			0.8599	2.9764	0.8599	2.9764	3.8363	0.8599	2.9764	0.2435	0.2543	1.1034	3.2307	4.3341		

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1881—Within the State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rails	2.2068	44.0000	97.0992
Length of steel rails	6.4614	39.2857	253.8406

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Leland Stanford, President of the Berkeley Branch Railroad Company, and James O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two (42) pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Roard of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

LELAND STANFORD.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth (15) day of March, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

BLACK DIAMOND COAL MINING RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

P. B. Cornwall, President ---------- San Francisco.
Louis McLane ---------- San Francisco.
D. O. Mills ---------- New York.
Thomas Bell ---------- San Francisco
J. B. Haggin ---------- San Francisco.
J. H. Dobinson, Secretary ---------- San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

East corner of Spear and Folsom Streets ---------- San Francisco, California.

The Black Diamond Railroad is not incorporated, but is the property of the Black Diamond Coal Mining Company, which company has a capital stock of five million dollars.

DEBT.

15. Total amount of unfunded debt, pay-roll and bills unpaid Jan. 1, 1882, about	$2,000 00
16. Total gross debt liabilities	$2,000 00

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

2. Bridging	$7,427 60
3. Superstructure, including rails	229,219 81
11. Total cost of construction	$236,647 41

Equipment.

	No.	Cost.
12. Locomotives	3	$31,562 19

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REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$1,497 65
7. Total earnings from passenger department	$1,497 65
8. Derived from local freight on roads operated by this company	$1,104 07
12. Total earnings from freight department	$1,104 07
14. Total transportation earnings	$2,601 72

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
Payroll	$24,740 12
Four hundred and fifty-eight tons Black Diamond coal	2,290 00
Blacksmith's coal	94 45
Hardware sundries	1,376 29
Stationery	47 25
Oil	845 50
Lumber	471 68
Thirty-one thousand eight hundred pounds of fifty-six-pound rails	1,028 46
One thousand ties	427 50
	$31,321 25
Less old iron sold	1,030 10
5. Total	$30,291 15

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$236,647 41
Cost of equipment	51,138 41
Profit and loss:	
Net current expense (less increase) is incorporated in Black Diamond Coal Mining Company.	

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
No credit being made for the coal merchandise transported for the Black Diamond Coal Mining Company.	$30,291 15	$2,601 72

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Black Diamond to Nortonville (six miles)	1868.
Side tracks (two thousand five hundred feet)	1876.
2. Length of main line of road from Black Diamond to Nortonville	6 miles.
Length of main line in California	6 miles.
5. Branches owned by the company	2,500 feet.
6. Total length of branches owned by the company	2,500 feet.
7. Total length of branches owned by the company in California	2,500 feet.
9. Length of double track on branches	2,500 feet.
10. Total length of road belonging to this company	$6\frac{2500}{5280}$ miles.
13. Aggregate length of track belonging to this company computed as single track	$6\frac{2500}{5280}$ miles.
14. Same in California	$6\frac{2500}{5280}$ miles.
18. Number of wooden bridges (aggregate length, 750 feet), in California	1
19. Number of crossings of highways at grade, in California	6
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	6
28. Number of railroad crossings over other roads:	
Northern Railway and San Pablo and Tulare Railroad	1

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	3	22 tons	Unknown.
Average weight of engines in working order		32 tons	Unknown.
Maximum weight of engines in working order		30 tons	Unknown.
6. Passenger cars	1	3,000 pounds	
6. Four-wheel box freight cars	1	4,500 pounds	
11. Four-wheel platform cars	4	4,500 pounds	
12. Other cars:			
Water	2	4,500 pounds	
Coal and gravel	30	4,500 pounds	
13. Total market value			Unknown.

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	17½
15. Number of locomotives equipped with train brakes (screw)	3
16. Number of cars equipped with train brakes (lever)	38

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	17,190
2. Rate of speed of express passenger trains, including stops	18 miles per hr.
4. Miles run by freight trains	17,190
5. Rate of speed of express freight trains, including stops	12 miles per hr.
8. Total train miles run	17,190
9. Total number of passengers carried	2,983
Number of through passengers going east (or north)	Do not know.
Number of through passengers going west (or south)	Do not know.
10. Total passenger mileage, or passengers carried one mile	17,898
11. Passenger mileage to and from other roads	Do not know.
Average number of miles traveled by each through passenger	6
12. Number of tons carried (not including gravel)	59,917
13. Total freight mileage, or tons carried one mile	368,500
14. Freight mileage to and from other roads	Do not know.
15. Highest rate of fare per mile for any distance (excluding one mile)	8⅓ cents.
16. Lowest rate of fare per mile for any distance (single fare)	8⅓ cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	8⅓ cents.
20. Average rate of fare per mile for all passengers	8⅓ cents.
21. Highest rate of freight per ton per mile for any distance (up the mountain)	$3 00
22. Lowest rate of freight per ton per mile for any distance (down the mountain)	$1 00
23. Average rate of local freight per ton per mile on roads operated by this company	$2 00
25. Average rate of freight per ton per mile for all (exclusive of coal)	$2 00
26. Average number of cars in passenger trains (including baggage cars)	1
27. Average number of cars in freight trains—basis of eight-wheel (sixteen cars of four wheels)	8
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	23½ tons.
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	40 tons.
30. Number of persons regularly employed by the Black Diamond Company, including officers on railroad	25
Average monthly pay of engine drivers	$90 00
Average monthly pay of passenger conductors	$80 00
Average pay of freight conductors	$1 75 per day.
Average monthly pay of brakemen, flagmen, and switchmen	$65 00
Average pay of section men	$2 00 per day.
Average monthly pay of mechanics in shops	$90 00
Average pay of laborers	$2 00 per day.

STATEMENT OF EACH ACCIDENT IN CALIFORNIA.

A boy—Byard Cantrell—fell between cars and was killed.

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TABLE C.

Length in Miles of Road and Tracks owned by the Company.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track Dec. 31, 1881.	
			Single.	Sidings.
Main Line and Branches.	From—	To—	Iron.	Iron.
Main line within State	Black Diamond	Nortonville	6 miles.	2,500 feet.

	December 31, 1881.	
	Within the State.	
	Length in Miles.	Average Weight.
Length of iron rail	12$\frac{5000}{5280}$	56 lbs. per yard.

Total length of iron rail laid during the year ..... 1,000 feet relaid.

STATE OF CALIFORNIA, County of San Francisco. } ss.

P. B. Cornwall, President of the Black Diamond Coal Mining Company, and J. Pettee, bookkeeper of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

P. B. CORNWALL.
JOHN PETTEE.

Subscribed and sworn to before me, this first day of April, 1882.

WILLIAM HARNEY,
Notary Public.

CALIFORNIA NORTHERN RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

N. D. Rideout ..... Owner.
Andrew J. Binney ..... General Manager.

BUSINESS ADDRESS OF THE COMPANY:

Marysville, Yuba County ..... California.

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

The California Northern Railroad was purchased at Commissioners' mortgage foreclosure sale on January 22d, 1881, by N. D. Rideout, at a total cost, for road, equipments, and all appurtenances, of $40,000.

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$15,945 04
2. Derived from passengers from Central Pacific Railroad	2,078 00
5. Derived from express and extra baggage	1,589 15
6. Derived from mails	972 35
7. Total earnings from passenger department	$20,584 54
8. Derived from local freight on roads operated by this company	$18,318 26
11. Derived from other sources belonging to freight department	9 95
12. Total earnings from freight department	$18,318 26
14. Total transportation earnings	$38,902 80

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$3,479 81
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	3,688 39
4. Telegraph expenses	3 90
5. Total	$7,172 10

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$10,218 67
4. New ties (cost included in track repairs).	
5. Repairs of bridges	3,931 59
6. Repairs of buildings and fixtures (stations and turn-tables)	1,850 35
10. Repairs of locomotives	574 94
14. Fuel for engines and cars; Number of cords of wood ——; cost	2,522 54
17. Oil and waste, etc.	210 04
19. Total	$19,317 13

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars	$316 44
4. Salaries, wages, and incidentals of passenger trains	3,207 92
5. Salaries, wages, and incidentals of passenger stations	3,937 10
8. Total	$7,461 46

Class IV—Freight traffic expenses.

3. Damages, freight (stolen)	$209 00
8. Total	$209 00
9. Total expenses of operating the road embraced in Classes I, II, III, and IV	$34,159 69
13. Total expenses	$34,159 69

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$4,743 11

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from passenger department, as per "Revenue for the Year," No. 7	$20,584 54

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year," No. 12	$18,318 26

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GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road and equipment	$40,000 00

Credits.

Profit and loss (profit)	4,743 11

DESCRIPTION OF ROAD.

2. Length of main line of road from Marysville to Oroville	26½ miles.
19. Total length of road belonging to this company	26½ miles.
11. Aggregate length of siding and other tracks not enumerated above	½ mile.
16. Number of spans of bridges of 25 feet and upwards, in California	1
18. Number of wooden bridges in California	24
27. Number of railroad crossings at grade	1

MILEAGE, TRAFFIC, ETC.

2. Rate of speed of mixed passenger and freight trains, including stops, miles per hour	20
15. Highest rate of fare per mile for any distance (excluding one mile)	.0754
16. Lowest rate of fare per mile for any distance (single fare)	.0754
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	.0754
18. Average rate of fare per mile received from passengers to and from other roads	.0754
20. Average rate of fare per mile for all passengers	.0754
21. Highest rate of freight per ton per mile for any distance	.1132
22. Lowest rate of freight per ton per mile for any distance	.0566
30. Number of persons regularly employed by company, including officers	17
Average monthly pay of engine drivers	$90 00
Average monthly pay of baggage masters	60 00
Average monthly pay of section men	40 00

ROLLING STOCK.

1. Locomotives	2
2. Tenders	2
6. Passenger cars	2
7. Mail and baggage cars	1
8. Eight-wheel box freight cars	5
10. Eight-wheel platform cars	6
12. Other cars—hand cars	3

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, Dec. 31, 1881.
			Single.
Main Line and Branches.	From—	To—	Iron.
Main line within State	Oroville	Marysville	26½
Total on whole road, December 31, 1881			26½

	December 31, 1881—Within State.	
	Length in Miles.	Average Weight per Mile.
Length of iron rails	53	45

STATE OF CALIFORNIA, County of Yuba. } ss.

Andrew J. Binney, General Manager of the California Northern Railroad, and of the said company, being duly sworn, deposes and says that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

ANDREW J. BINNEY.

Subscribed and sworn to before me this fifteenth day of May, 1882.

CHARLES E. SWEZY.

CALIFORNIA PACIFIC RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

R. P. Hammond, President	San Francisco.
George Crocker, Vice-President	San Francisco.
N. T. Smith	San Francisco.
J. L. Willcutt, Treasurer	San Francisco.
W. V. Huntington	San Francisco.
Charles F. Crocker	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ---- California.

The California Pacific Railroad Company was incorporated December 23, 1869, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

Names of Railroad Companies.	Dates of Incorporat'n.	Names of Railroad Companies.	Dates of Incorporat'n.
California Pacific R. R. Co.	Jan. 6, 1865	San Francisco & Marysville R. R.	Oct. 26, 1857.
		Sacramento & San Francisco R. R.	Dec. 2, 1864.
Cal. Pac. R. R. Extension Co.	April 5, 1869	Napa Valley R. R. (by purchase)	Mar. 2, 1864.

CAPITAL STOCK.

1. Capital stock authorized by charter	$12,000,000 00
2. Capital stock authorized by votes of company	12,000,000 00
3. Capital stock issued [number of shares, 120,000]; amount paid in	12,000,000 00
5. Total amount paid in as per books of the company	12,000,000 00
8. Par value of shares issued	100 00
9. Total number of stockholders ---- 133	
10. Number of stockholders in California ---- 40	
11. Amount of stock held in California	7,652,400 00

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DEBT.

12. Funded debt as follows:		
Bonds		$6,851,000 00
Interest paid on same during year	$403,500 00	
13. Total amount of funded debt		$6,851,000 00
14. Unfunded debt:		
Incurred for construction, equipment, or purchase of property		1,569,812 35
All other debts, current credit balances, etc.		
16. Total gross debt liabilities		$8,420,812 35
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:		
Cash on hand		$443,615 42
Materials and supplies on hand		
Sinking funds		
Other securities and debt balances		
18. Total net debt liabilities		$7,977,196 93

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	$18,340,640 93
2. Bridging	
3. Superstructure, including rails	
4. Land and right of way	46,403 78
Land damages	53,305 63
Fences	108,965 27
6. Buildings and stations	93,332 35
7. Tools	14,319 82
8. Furniture	6,200 32
Agencies, salaries, and other expenses during construction:	
Wharves	121,857 66
11. Total cost of construction	$18,785,025 76

Equipment.

	No.	Cost.
12. Locomotives	12	$138,443 26
16. Passenger cars	16	256,570 62
Baggage cars	6	
17. Freight cars	189	
Other cars	1	
18. Total for equipment		$395,013 88

23. Steamboat Property.

Steamer New World	Cost net	$315,909 91
Steamer Moulton		
Steamer Vallejo		
Barge Napa		

This fleet has been either sold or condemned and broken up. This sum represents the actual loss to the company, for the property is out of sight and valueless.

26. Total for property purchased, etc. (capital represented in old fleet)	$315,909 91
27. Whole amount of permanent investments	19,180,039 64
30. Cash and cash assets	443,615 42
31. Total property and assets of the company	$19,939,564 97

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry	$84 50
2. Bridging	580 00
4. Land damages and right of way	1,509 39
Fences	796 03
8. New sidings	5,425 95
18. Total	$8,395 87
19. Property sold and credited to property account during the year:	
Old material sold	3,039 20
20. Net addition to property account for the year	$5,356 67

REVENUE FOR THE YEAR.

Traffic earnings and operating expenses are included in lessee's report.		
Less general expenses	$2,755 28	
Repairing washouts and protection against freshets	89,504 49	
		92,259 77
Balance net income		$507,740 23

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$507,740 23
2. Percentage of same to capital stock and net debt		.02 5/10
3. Percentage of same to total property and assets		.02 5/10
4. Interest accrued during the year:		
On funded debt	$403,500 00	
On other debt	84,856 81	
Total		488,356 81
7. Balance for the year, or surplus		19,383 42
8. Deficit at commencement of the year	$500,630 80	
9. Deficit at commencement of the year, as changed by aforesaid entries		500,603 80
10. Total deficit, December 31, 1881		481,247 38

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

Earnings and expenses are included in accounts of lessees.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road and steamers	$19,100,935 67
Cost of equipment	395,013 88
Cash, cash assets, and other items	443,615 42
Profit and loss	481,247 38
Total	$20,420,812 35

Credits.

Capital stock	$12,000,000 00
Funded debt	6,851,000 00
Other debts	1,569,812 35
Total	$20,420,812 35

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Rental		$600,000 00
Interest	$488,356 81	
Repairs of washouts	89,504 49	
General expenses	2,755 28	
Balance (profit)	19,383 00	
	$600,000 00	$600,000 00

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DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:

From Vallejo to Sacramento	At sundry dates in year 1869, while in hands of contractors, who turned the road over to the railroad company January, 1870. They have no records showing details of the various openings for traffic purposes.
From Napa Junction to Calistoga	
From Davisville to Marysville	

2. Length of main line of road from Vallejo to Sacramento	60.3900 miles.
Length of main line in California	60.3900 miles.
3. Length of line with track laid, if road is not completed	Completed.
5. Branches owned by the company	2
Names and description of; single or double track:	
Napa Branch; Adelanta to Calistoga (single track)	34.4800 miles.
Marysville Branch; Davisville to Knights Landing (single track)	18.6400 miles.
6. Total length of branches owned by the company	53.1200 miles.
7. Total length of branches owned by the company in California	53.1200 miles.
10. Total length of road belonging to this company	113.5100 miles.
11. Aggregate length of siding and other tracks not enumerated above	23.9037 miles.
12. Same in California	23.9037 miles.
13. Aggregate length of track belonging to this company computed as single track	137.4137 miles.
14. Same in California	137.4137 miles.
15. Total length of steel rail in tracks belonging to this company, not including steel top rail:	
Steel rail, fifty pounds per yard (88.1044 miles)	44.0522 miles.
Steel rail, sixty pounds per yard (4.9886 miles)	2.4943 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	23
18. Number of wooden bridges (aggregate length, 20,142 feet) in California	205

Bridges built within the year in California.

Location.	Kind.	Material.	Length.	When Built.
Near Webster	Pile trestle	Wood	1,945 feet	1881.
Between Webster and Sacramento	Extension of pile trestle	Wood	1,000 feet	1881.

Miles of embankment replaced by bridges or trestlework, during year, in California	0.5577 miles.
19. Number of crossings of highways at grade, in California	98
20. Number of crossings of highways over railroad, in California	1
22. Number of highway bridges eighteen feet above track, in California	1
24. Number of highway crossings at which gates or flagmen are maintained, in California	1 flagman.
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	97
27. Number of railroad crossings at grade:	
Central Pacific Railroad at Sacramento	1

ROLLING STOCK.

	No.	Average Weight.	Market Value. (Cost.)
1. Locomotives	12		
Average weight of engines in working order		59,367	
Maximum weight of engines in working order [61,200 lbs.]			
2. Tenders	12		
Average weight of tenders full of fuel and water		32,750	$138,443 26
Maximum weight of tenders full of fuel and water [41,000 lbs.]			
Average joint weight of engines and tenders		92,117	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [41 feet, 10 inches]			
4. Total length of heaviest engine and tender over all [51 feet]			
6. Passenger cars	16		
Average weight		39,275	
Maximum weight [45,000 lbs.]			
7. Mail and baggage cars	6	31,250	
8. Eight-wheel box freight cars	37	17,300	$256,570 62
10. Eight-wheel platform cars	152	13,500	
12. Other cars (caboose)	1	18,600	
13. Total market value			$395,013 88

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	189
15. Number of locomotives equipped with train brakes—kind of brake:	
Westinghouse air brake	5
16. Number of cars equipped with train brakes—kind of brake:	
Westinghouse air brake	22
17. Number of passenger cars with Miller platform and buffer	16

MILEAGE, TRAFFIC, ETC.

Reported by lessees.

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12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Series.	Date.	Due.	In what Money Payable. Principal and Interest.	Interest.		Authorized Amount.	Total Issued December 31, 1881.	Accrued Interest.	Amount of Bonds Outstanding December 31, 1881.
					Rate.	Payable.			During Year.	
First mortgage		Jan. 1, 1867	Jan., 1887	Gold	7	Jan. and July	$2,250,000	$2,250,000	$157,500	$2,250,000
Extension Company		May 1, 1869	May, 1889	Gold	7	Jan. and July	3,500,000	3,500,000		* 8,000
Second mortgage		Aug. 9, 1871	Jan., 1891	Gold	6	Jan. and July	1,600,000	1,600,000	96,000	1,600,000
Third mortgage	A	July 1, 1875	July, 1905	Gold	6	Jan. and July	2,000,000	1,993,000	120,000	† 1,993,000
Third mortgage	B	July 1, 1875	July, 1905	Gold	3	Jan. and July	1,000,000	1,000,000	30,000	1,000,000
									$403,500	$6,851,000

* Interest ceased on these January 1, 1874.

†Interest on the unissued seven thousand of these bonds is accumulating—to be paid to the holders of the eight thousand dollars outstanding Extension Company's bonds when they shall send them in to exchange for third mortgage bonds of series "A." The interest is consequently charged up each half year.

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1881.										
			Single.		Length of Roadway—Single and Double Track.			Reduced to Single Track.					
								Track.		Sidings.	Track and Sidings.		
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	(b) Iron.	(c) Steel.	Iron and Steel.
Main line within State	Vallejo	Sacramento	13.8923	46.4977	13.8923	46.4977	60.3900	13.8923	46.4977	16.8824	30.7747	46.4977	77.2724
Napa Branch	Adelante	Calistoga	34.4312	0.0488	34.4312	0.0488	34.4800	34.4312	0.0488	3.2986	37.7298	0.0488	37.7786
Marysville Branch	Davis	Knight's Landing.	18.6400	0.0000	18.6400		18.6400	18.6400		3.7227	22.3627		22.3627
Total on whole road, December 31, 1881			66.9635	46.5465	66.9635	46.5465	113.5100	66.9635	46.5465	23.9038	90.8672	46.5465	137.4137
Total constructed during year										1.4304	1.4304		1.4304
Total within the State constructed during year										1.4304	1.4304		1.4304

The length of *rail is* double the length of single track, columns (b) and (c) above.

	December 31, 1881.		
	Within the State.		
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rails	181.7344	40.0000	7,269.3760
Length of steel rails	93.0930	39.7067	3,696.4200
Total length of old iron rail laid during the year in construction of sidings	2.8608	40.0000	114.4320
Total length of steel rail laid during the year used in main line to replace old iron	2.1206	39.2857	83.3092
Total length of iron rail replaced by steel rail during the year	2.1206	40.0000	84.8240

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TABLE D. GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

All grants of the nature called for by this form, were paid to the contractors who built the road, as stipulated in the written contract. This company has not kept any record of such grants or donations, and has no information whereby entries can now be made in the books.

LANDS OR PROPERTY, INCLUDING RIGHT OF WAY DONATED BY STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, STATING IN DETAIL THE AMOUNT OF LAND GRANTED FOR RIGHT OF WAY, FOR STATIONS, FOR SHOPS, FOR STOREHOUSES, ETC.

Considerations are named in all deeds, in some at merely nominal figures; possibly, some of the right of way was donated, but details cannot be given.

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Richard P. Hammond, President of the California Pacific Railroad Company, and J. O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are in all respects just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

RICHARD P. HAMMOND.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this twentieth (20th) day of March, 1882.

CHAS. J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

CALIFORNIA SOUTHERN RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

Thomas Nickerson, President	Boston, Massachusetts.
Thomas L. Rogers, Vice-President	San Diego, California.
S. W. Reynolds, Treasurer and Assistant Secretary	Boston, Massachusetts.
G. Norman Weaver, Secretary	San Diego, California.
Jos. O. Osgood, Chief Engineer	San Diego, California.
F. H. Pattee, Cashier	San Diego, California.
Henry E. Cooper, Attorney	San Diego, California.
I. H. Goodspeed, Auditor	Boston, Massachusetts.

NAMES OF DIRECTORS.

Thomas Nickerson	Boston, Massachusetts.
Thomas L. Rogers	San Diego, California.
Joseph O. Osgood	San Diego, California.
Moses N. Luce	San Diego, California.
James S. Gordon	San Diego, California.

BUSINESS ADDRESS OF THE COMPANY.

The California Southern Railroad Company ---- San Diego, California.

The California Southern Railroad Company was incorporated December 28, 1881, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

Names of Railroad Companies.	Dates of Incorporation.
California Southern Railroad Company	October 12, 1880.
California Southern Extension Railroad Company	May 23, 1881.

CAPITAL STOCK.

1. Capital stock authorized by charter	$4,400,000 00
2. Capital stock authorized by votes of company	4,400,000 00
3. Capital stock issued [number of shares, 20,880]; amount paid in	2,088,000 00
5. Total amount paid in, as per books of the company	2,088,000 00
8. Par value of shares issued	100 00
9. Total number of stockholders ---- 325	
10. Number of stockholders in California ---- 11	
11. Amount of stock held in California	27,800 00

DEBT.

14. Unfunded debt: Incurred for construction, equipment, or purchase of property	$332,322 36
15. Total amount of unfunded debt	$332,322 36
16. Total gross debt liabilities	$332,322 36
17. Amount of cash, materials, and supplies on hand, sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:	
Cash on hand	$10,186 02
Material and supplies on hand	$766,417 87
Sinking funds	$5,081,717 88
Other securities and debt balances	$827,621 77

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	$619,027 87
2. Bridging	126,646 98
3. Superstructure, including rails	454,582 39
4. Land:	
Land damages	15,136 15
Fences, road crossings, and signs	1,159 27
5. Passenger and freight stations, and water stations	16,924 75
6. Engine houses, car sheds, and turn-tables	7,368 12
7. Machine shops, including machinery and tools	15,526 70
9. Engineering	105,983 52
Agencies, salaries, and other expenses during construction	44,109 94
Telegraph	6,899 78
Wharves and storehouses	27,042 98
11. Total cost of construction	$1,440,408 45

Equipment.

	No.	Cost.
12. Locomotives	6	$71,754 41
17. Freight cars	77	52,746 20
Other cars	18	5,719 62
18. Total for equipment		$130,220 23

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PROPERTY PURCHASED, ETC.

22. *Other Securities.*

	Nominal Am't.	Price Paid.
San Diego Land Town Company Stock	$311,000 00	*

23. *Steamboat Property.*

	Nominal Am't.	Price Paid.
Tugs and lighters (two tugs and four lighters)	$23,408 75	$27,409 95

25. *Other Property Purchased.*

Hotel at National City (in progress of construction)	$230 97
26. Total for property purchased, etc.	334,639 72
27. Whole amount of permanent investments	1,905,268 40
28. Property in California	1,905,268 40
29. Amount of supplies and materials on hand	766,417 87
30. Cash and cash assets	61,003 90
31. Total property and assets of the company	2,730,690 17

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry		$619,027 87
2. Bridging		126,646 98
3. Superstructure, including rails		454,582 39
4. Land:		
Land damages		15,136 15
Fences		1,159 27
5. Passenger and freight stations		141 00
Woodsheds and water stations		16,183 75
6. Engine houses, car sheds, and turn-tables		7,368 12
7. Machine shops		15,526 70
8. Engineering, agencies, salaries, and other expenses during construction		150,093 46
Telegraph		6,899 78
Wharves and storehouses		27,042 98
9. Locomotives	[Number, 6]	
14. Freight and other cars	[Number, 95]	
17. Any other expenditures charged to property account:		
Tugs and lighters		23,408 75
Hotel at National City		203 97
San Diego Land and Town Company stock		311,000 00
18. Total		$1,905,268 40
20. Net addition to property account for the year		$1,905,268 40

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road		$1,440,408 45
Cost of equipment		130,220 23
Other investments		334,639 72
Supplies and materials on hand		766,417 87
Cash, cash assets, and other items:		
Cash	$10,186 02	
Profit balances	50,817 88	
		61,003 90
Total		$2,732,690 17

* Donated to the company.

Credits.

Capital stock		$2,080,000 00
Other debts:		
Notes payable	$125,318 00	
*Unpaid drafts	72,000 00	
Vouchers unpaid	131,901 05	
Credit balances	3,103 31	
		332,322 36
Profit and loss (profit):		
Subsidy received	311,000 00	
Interest received	1,367 81	
		312,367 81
Total		$2,732,690 17

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Interest		$1,367 81
Donation of 3,110 shares of the capital stock of the San Diego Land and Town Company		311,000 00
Total		$312,367 81

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use: Not opened at the date of this report.	
2. Length of main line of road from San Diego to Colton	127 miles.
Length of main line in California	127 miles.
3. Length of line with track laid, if road is not completed	47 miles.
10. Total length of road belonging to this company	47 miles.
11. Aggregate length of siding and other tracks not enumerated above	5.3 miles
12. Same in California	5.3 miles.
13. Aggregate length of track belonging to this company computed as single track	52.38 miles.
14. Same in California	52.38 miles.
15. Total lengths of steel rail in tracks belonging to this company, not including steel top rail; (weight per yard, 50 pounds)	100.94 miles.
18. Number of wooden bridges (aggregate length, 7,350 feet) in California	60
19. Number of crossings of highways at grade, in California	8

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	6		$70,000 00
Average weight of engines in working order		30 tons.	
Maximum weight of engines in working order [35 tons]			
Average weight of tenders full of fuel and water		25 tons.	
Maximum weight of tenders full of fuel and water [30 tons]			
Average joint weight of engines and tenders		55 tons.	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [44.7 feet]			
4. Total length of heaviest engine and tender over all [53.7 feet]			
8. Eight-wheel box freight cars	10		8,000 00
10. Eight-wheel platform cars	67		45,000 00
12. Other cars	18		6,000 00
14. Total number of freight cars, including coal, etc., on a basis of eight wheels			77

* Profits drawn on Boston not presented at date of report.

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.	Length of Track December 31, 1881.									
	Single.	Length of Roadway—Single and Double Track.		Reduced to Single Track.						
				Track.	Sidings.		Track and Sidings.			
		From—		Steel.	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	
Main Line and Branches			Steel.	Iron and Steel.	Steel.	Iron.	Steel.	Iron.	(c) Steel.	Iron and Steel.
Main line within State		San Diego	47,000	47,000	47,000	1,910	3,470	(b) 1,910	50,470	52,380
Total on whole road December 31, 1881			47,000							
Total constructed during year			47,000							
Total within the State constructed during year			47,000							

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1881—Within the State.		
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rails	3,820	39	150
Length of steel rails	100,940	39	3,975

Total length of iron rail laid during the year	3.820 miles.
Total length of steel rail laid during the year	100.940 miles.

TABLE D. GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

Remarks.	Total Amount of Bonds or Cash.	Disposed of—Cash Realized.	Remarks.
Subscription of citizens of San Diego to apply towards payment of right of way	$10,000	$10,000	Credited to the cost of right of way.
Three thousand one hundred and ten shares of the capital stock of the San Diego Land and Town Company	311,000	----------	Credited to subsidy account.

TABLE E. OTHER AIDS OR GRANTS, FROM THE UNITED STATES, STATES, COUNTIES, CORPORATIONS, OR INDIVIDUALS.

Lands Granted by the United States Government.

To what Railroad Company.	Acres per Mile.	Number of Miles.	Number of Acres.		Estimated Value.	
			Total.	Net Total.	Per Acre.	Total.
California Southern, per right of way	24.242	25.720	623.504	623.504	$1 25	$779 38
Depot grounds	----------	----------	29.800	29.800	1 25	37 25
						$816 63

LANDS OR PROPERTY, INCLUDING RIGHT OF WAY DONATED BY STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, STATING IN DETAIL THE AMOUNT OF LAND GRANTED FOR RIGHT OF WAY, FOR STATIONS, FOR SHOPS, FOR STOREHOUSES, ETC.

By Whom Donated.	Description of Property.	Estimated Value.
Individuals	Depot grounds, 209.012 acres	$69,208 80
Individuals	Right of way, 334.476 acres	8,985 60
City of San Diego	Right of way, 17.811 acres	89 06
		$78,283 46

NOTE.—At the time to which this report is rendered (December 31, 1881), the road of the California Southern Railroad Company was under construction, and no part of it has been opened for operation. Many of the foregoing questions, therefore, not being applicable to this company at that date, no answers have been made to them.

STATE OF MASSACHUSETTS, County of Suffolk. } ss.

Thomas Nickerson, President of the California Southern Railroad Company, and S. W. Reynolds, Treasurer of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing twenty-six sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

THOS. NICKERSON, President.
S. W. REYNOLDS, Treasurer.

Subscribed and sworn to before me, this seventeenth day of April, 1882.

LEWIS C. WADE,
Notary Public.

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CENTRAL PACIFIC RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
C. P. Huntington, First Vice-President	New York.
Charles Crocker, Second Vice-President	San Francisco.
E. H. Miller, Jr., Secretary	San Francisco.
E. W. Hopkins, Treasurer	San Francisco.
C. F. Crocker	San Francisco.
W. V. Huntington	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

Fourth and Townsend Streets	San Francisco, California.
No. 9 Nassau Street	New York.

The Central Pacific Railroad Company was incorporated August 22, 1870, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

1. Central Pacific Railroad Company, consolidated June 23, 1870.
   - Central Pacific Railroad Company of California, chartered June 28, 1861; amended October 8, 1864.
   - The Western Pacific Railroad Company, chartered December 13, 1862
   - San Francisco Bay Railroad Company, chartered September 25, 1868

   } The Western Pacific Railroad Company, consolidated November 2, 1869.
2. California and Oregon Railroad Company, consolidated December 18, 1869.
   - California and Oregon Railroad Company, chartered June 30, 1865
   - Marysville Railroad Company, chartered November 29, 1867
   - Yuba Railroad Company, chartered November 17, 1862

   } California and Oregon Railroad Company, consolidated January 16, 1868.
3. San Francisco, Oakland, and Alameda Railroad Company, consolidated June 29, 1870.
   - San Francisco and Alameda Railroad Company, chartered March 25, 1863
   - San Francisco, Alameda, and Stockton Railroad Company, chartered December 8, 1863

   } San Francisco and Alameda Railroad Company, consolidated October 15, 1868.

   San Francisco and Oakland Railroad Company, chartered October 21, 1861.
4. San Joaquin Valley Railroad Company, chartered February 5, 1868.

The above four roads were consolidated August 22, 1870, under the name of the Central Pacific Railroad Company.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$100,000,000 00
2.	Capital stock authorized by votes of company	100,000,000 00
3.	Capital stock issued [number of shares, 592,755]; amount paid in	59,275,500 00
5.	Total amount paid in as per books of the company	59,275,500 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders	1,340
10.	Number of stockholders in California	48
11.	Amount of stock held in California	18,272,800 00

DEBT.

12.	Funded debt as follows:		
	Bonds		54,917,000 00
	Interest paid on same during year	$3,289,166 58	
13.	Total amount of funded debt		$54,917,000 00
14.	Unfunded debt:		
	Incurred for construction, equipment, or purchase of property		$6,083,254 36
	All other debts, current credit balances, etc.		
	Interest on unfunded debt	$219,126 98	
	United States subsidy bonds		27,855,680 00
15.	Total amount of unfunded debt		$33,938,934 36
16.	Total gross debt liabilities		$88,855,934 36

17.	Amount of cash, materials, and supplies on hand, sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:		
	Cash on hand		$643,255 33
	Materials and supplies on hand		2,792,008 99
	Sinking funds of the company		4,816,659 17
	Other securities and debt balances		4,057,424 09
	United States Transportation and Sinking Fund		6,746,668 30
			$19,056,015 88
18.	Total net debt liabilities		$69,799,918 48
19.	Amount of bonds or stock of other companies guaranteed, principal or interest, or on which interest is paid by this company, giving name of each:		
	California Pacific Railroad Company:		
	1,600 bonds, $1,000 each, three per cent		$1,600,000 00
	4,000 bonds, $500 each, six per cent		2,000,000 00
	2,000 bonds, $500 each, three per cent		1,000,000 00
	Stockton and Copperopolis Railroad Company:		
	1,000 bonds, $—— each, five per cent, principal and interest guaranteed		500,000 00
			$5,100,000 00

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1.	Grading and masonry	These items, not having been kept separate, cannot be separated.
2.	Bridging	
3.	Superstructure, including rails	
4.	Land:	
	Land damages	
	Fences	
5.	Passenger and freight stations	
6.	Engine houses, car sheds, and turn-tables	
7.	Machine shops, including machinery and tools	
8.	Interest	
9.	Engineering	
	Agencies, salaries, and other expenses during construction	
11.	Total cost of construction	$137,207,563 86

Equipment.

		No.	Cost.
12.	Locomotives	227	$2,693,618 40
13.	Snow plows on wheels	9	37,536 02
14.	Parlor cars, officers' cars	5	
15.	Sleeping cars	41	
16.	Passenger cars	220	1,660,419 78
	Mail cars	56	
	Baggage cars and express		
17.	Freight cars	4,570	3,674,291 36
	Other cars—Caboose, 79; station, 16; service, 641	736	
18.	Total for equipment	5,864	$8,065,865 56

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

19. *Lands.*

San Francisco, Block 9	$343,108 64
Oakland Point	813,591 40
Alameda County	227,111 67
Ogden	13,051 22
Marysville	7,300 00
Sacramento City and other points	74,422 37
Sacramento City—Hospital property	62,875 77
Total	$1,541,461 07

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20. *Stock of other roads.*

Coos Bay Coal Co.—Stock and lands	$159,128 13

PROPERTY PURCHASED, ETC.

22. *Other securities.*

One C. P. bond bought, mutilated	$1,000 0 0

23. Steamboat Property:

Ferry Steamers—Alameda, Amador, Amelia, Capital, El Capitan, Oakland, Thoroughfare, Transit. The cost of all ferry steamers are included in construction account.

River Steamers—Apache, Chin-du-Wan, Dover, Enterprise, Flora, Gov. Dana, Modoc, Yosemite. River steamers and barges were purchased by the company, in connection with other property (real estate, etc.), and the cost of each cannot be given.

Barges—Ace of Spades, Aliso, Gen. Garfield, Farmer, Jacinto, Gov. Hayes, Mono, Napa, Moulton, Yolo. The cost of river steamers, barges, and a fifty-vara lot and improvements, corner Broadway and Front Streets, San Francisco, and other steamer property, to December 31, 1881, was $767,677 52.

25. *Other property purchased.*

Shops and rolling mill at Sacramento*	$1,115,980 50
Machinery and tools in shops	718,904 76
Furniture, telegraph instruments, safe, etc.	155,772 04
	$1,990,657 30
26. Total for property purchased, etc.	$4,459,924 02
27. Whole amount of permanent investments	$149,733,353 44
28. Property in California: Cannot be stated, because construction accounts were not kept separate for California.	
29. Amount of supplies and materials on hand	2,792,008 99
30. Cash and cash assets	16,103,878 76
31. Total property and assets of the company, not including lands granted to the company	$168,629,241 19

32. SINKING AND CONTINGENT FUNDS.

Showing amount of same and their purpose.

Applicable to Redemption of what Bonds.			Received during Year.	Applied During Year.	On Hand Dec. 31, 1881.
No.	Character.	Series.			
1	Cannot mortgage bonds		$94,823 15		$7,000 00
2	California State aid		94,823 15		932,868 30
3	First mortgage, Central Pacific Railroad	A to D	82,712 39		932,868 30
4	First mortgage, Central Pacific Railroad	E to I	32,233 62		699,585 65
5	First mortgage, Western Pacific Railroad	A and B	130,782 23		174,069 25
6	First mortgage, California and Oregon Railroad	A and B	358,454 41		731,871 75
7	Income bonds		103,344 03		1,033,379 87
8	San Francisco, Oakland, and Alameda		51,672 02		203,344 03
9	San Joaquin Valley				101,672 02
			$948,845 00	$335,000 00	$4,816,659 17

* Other shops are included in construction account.

Of the total amount of funds, $4,816,659 17, there is invested in bonds $3,947,900, the interest on which is added to the funds, as it is collected, and the balance, $868,759 17, was in cash, December 31, 1881.

In addition to the above there are the following funds for the redemption of the company's bonds:

Cash in the hands of the Trustees of the Land Grant Mortgages, for redemption of Land Bonds	$612,517 56
Bonds and cash in the Central Pacific Railroad Sinking Fund in the United States Treasury September 30, 1881	1,061,306 91

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry	$27,442 23
2. Bridging	12,500 00
4. Land	
5. Passenger and freight stations	69,293 37
Woodsheds and water stations	
6. Engine houses and car sheds	
7. Machine shops—rolling mill at Sacramento	63,391 30
8. Engineering, agencies, salaries, and other expenses during construction:	
Oakland Ferry improvement	89,535 15
Water supply	2,993 62
13. Passenger, mail, and baggage cars (two passenger cars, three baggage, mail, and express cars—not yet finished)	15,690 28
14. Freight and other cars [4]	3,071 86
17. Any other expenditures charged to property account:	
Filling trestle at Brooklyn	40,357 25
Filling trestle near San Joaquin River	19,545 34
Filling trestle and raising grade at Bear River	9,797 40
Filling in Mission Bay, San Francisco	1,791 53
Machinery in shops	18,138 77
Steamer division property	207 88
Culture of trees	3,277 03
18. Total	$377,033 01
19. Property sold and credited to property account during the year	$15,531 96
Steamer division property	4,724 70
Machinery and tools from shops	5,939 75
Buildings burned, etc.	210 00
	$26,406 41
20. Net addition to property account for the year	$350,626 60

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$4,644,738 22
2. Derived from passengers from and to other roads, over roads operated by this company	2,048,090 15
4. Derived from other sources belonging to passenger department	212,524 25
5. Derived from express and extra baggage	401,652 90
6. Derived from mails	457,168 23
7. Total earnings from passenger department	$7,764,173 75
8. Derived from local freight on roads operated by this company	$12,418,640 01
9. Derived from other roads as tolls or for use of freight cars	4,279 76
10. Derived from freight from and to other roads on joint tariff	3,423,499 00
12. Total earnings from freight department	$15,846,418 77
Miscellaneous earnings	$329,230 21
Rent of telegraph line	92,000 00
Rent of warehouses, stations, etc.	62,278 22
14. Total transportation earnings	$24,094,100 95

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15. Earnings per mile of road operated	$8,899 28
16. Earnings per train mile	2 83
18. Income derived from all sources (including accretions from sinking funds, investments in stocks, bonds, steamboat property, transportation lines, etc.):	
Interest on sinking funds	$262,500 00
Land grant bonds redeemed	420,000 00
Dividends, and stock sold	612,656 40
19. Total income derived from all sources	$25,389,257 35

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$264,083 06
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
Superintendence, general office, and miscellaneous expenses	$787,697 22
Legal expenses	167,894 69
Civil engineering	16,007 71
Land department expenses	30,826 38
Damages for stock killed, etc.	14,739 78
3. Insurance premiums and losses by fire, and damages for fires set by engines	54,290 53
4. Telegraph expenses	122,451 13
5. Total	$1,457,990 50
6. Proportion belonging to passenger department	$463,932 58
7. Proportion belonging to freight department	994,057 92

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$1,333,787 80
3. Steel rails laid, deducting old rails taken up:	
Number of miles, 101.4780; weight per yard, 50 pounds } Number of miles, 178.3142; weight per yard, 60 pounds }	654,526 61
4. New ties. (Number, 221,353); cost	87,718 88
5. Repairs of bridges	254,061 80
6. Repairs of buildings	118,042 26
7. Repairs of and additions to machine shops } Repairs of show-sheds }	24,496 62
8. Repairs of fences, road crossings, and signs	32,342 29
9. Removing ice and snow, watching, etc.	37,408 78
10. Repairs of locomotives	466,041 41
12. Repairs of snow-plows	226 76
14. Fuel for engines and cars:	
Number of cords of wood, 65,751¼; cost	300,875 11
Number of tons of coal, 215,399½; cost	1,759,289 03
15. Water and water stations	110,647 79
16. Fuel for stations and shops: For shops, charged pro rata to work. For stations, charged station service.	
17. Oil and waste	52,191 26
18. Switchmen, watchmen, flag, and signalmen: Included in train service.	
19. Total	$5,232,054 40
20. Proportion of same to passenger department	$1,664,839 71
21. Proportion of same to freight department	3,567,214 69

Class III—Passenger and freight traffic expenses.

1. Repairs of passenger, mail, baggage, and freight cars	$244,721 31
Repairs of officers cars	8,935 25
3. Damages and gratuities, passengers	11,033 26
4. Salaries, wages, and incidentals of passenger trains	554,224 00
Salaries, wages, and incidentals of ferries	537,180 30
5. Salaries, wages, and incidentals of passenger stations	236,527 86
8. Total	$1,592,623 98

Class IV—Freight traffic expenses.

1. Repairs of freight cars	$398,917 04
Repairs of dump and work cars	14,343 35
3. Damages and gratuities, freight	47,666 58
4. Salaries, wages, and incidentals of freight trains	1,187,523 33
Salaries, wages, and incidentals of ferries	230,220 13
5. Salaries, wages, and incidentals of freight stations	506,807 27
7. Amount paid other roads for balance of mileage of freight cars	30,426 41
8. Total	$2,415,904 11
9. Total expenses of operating the road embraced in Classes I, II, III, and IV.	$10,698,572 99
12. Amount paid other companies as rent for use of road, specifying each company, the amount and basis on which rent is computed:	
Southern Pacific Railroad, of California	$1,650,600 00
Southern Pacific Railroad, of Arizona	622,355 40
Southern Pacific Railroad, of New Mexico	222,258 99
Galveston, Harrisburg, and San Antonio Railroad	16,855 24
California Pacific Railroad	600,000 00
Northern Railway and San Pablo and Tulare Railroad	570,000 00
Los Angeles and Independence Railroad	20,196 00
Los Angeles and San Diego Railroad	33,384 00
Pacific Improvement Company—Yuma bridge	12,000 00
Amador Branch Railroad	42,000 00
Sacramento and Placerville Railroad	8,606 45
Berkeley Branch Railroad	9,216 00
Stockton and Copperopolis Railroad	25,000 00
Union Pacific Railroad	48,383 35
13. Total expenses	$14,579,428 42

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$10,809,828 93
2. Percentage of same to capital stock and net debt	8.37
3. Percentage of same to total property and assets	6.41
4. Interest accrued during the year:	
On funded debt (paid)	3,289,166 58
On other debt	219,124 98
5. Dividends declared (6 per cent) for the year, amount	3,556,530 00
6. Date of last dividend declared August 1	1,778,265 00
7. Balance for the year, or surplus	$3,745,007 37
8. Surplus at commencement of the year: Deduct or add entries made in profit and loss account during the year, not included in the foregoing statement	$16,752,799 46
9. Surplus at commencement of the year, as changed by aforesaid entries	16,752,799 46
10. Total surplus December 31, 1881	$20,497,806 83
11. Paid to sinking funds, in hands of Trustees	$948,845 00

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from Passenger Department, as per "Revenue for the Year," No. 7	$7,764,173 75
2. Per passenger train mile	2 87
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	463,932 58
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	1,664,839 71
5. Expenses, "Passenger Traffic," as per Class III, No. 8	1,592,623 98
6. Total expenses	$3,721,396 27
7. Per passenger train mile	$1 38
8. Net earnings	4,042,777 48
9. Per passenger train mile	1 49

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RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1.	Total earnings from Freight Department, as per "Revenue for the Year," No. 12	$15,846,418 77
2.	Per freight train mile	2 73
3.	Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	$994,057 92
4.	Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 21	3,577,214 69
5.	Expenses, "Freight Traffic," as per Class IV, No. 8	2,415,904 11
6.	Total expenses	$6,977,176 72
7.	Per freight train mile	1 20
8.	Net earnings	8,869,242 05
9.	Per freight train mile	1 53

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road		$137,207,563 86
Cost of equipment		8,065,865 56
Other investments		4,299,795 89
Supplies and materials on hand		2,792,008 99
Sinking funds in hands of Trustees		4,816,659 17
Cash, cash assets, and other items:		
Cash on hand		643,255 33
United States transportation and sinking fund accounts		6,748,668 30
Stock and bonds		160,128 13
Bills receivable		949,527 46
Accounts receivable		2,947,768 50
Total		$168,629,241 19

Credits.

Capital stock		$59,275,500 00
Funded debt		54,917,000 00
Other debts:		
Government bonds		27,855,680 00
Unclaimed dividends		7,575 00
Accounts payable		4,490,480 87
Trustees land grant mortgage	$612,517 56	
Sinking funds uninvested	868,759 17	
Hospital fund	103,921 76	
		1,585,198 49
Profit and loss (profit)		20,497,806 83
Total		$168,629,241 19

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Interest	$3,508,291 56	
Taxes	264,083 06	
General and miscellaneous expenses	239,606 98	
Legal expenses	167,894 69	
Civil engineering	16,007 71	
Land Department expenses	30,826 38	
Dividends Nos. 11 and 12	3,556,530 00	
Operating river steamers and barges	1,702 63	
Expense for operating for the year 1881	13,859,306 97	
Balance credit this account January 1, 1881		$16,752,799 46
Earnings for the year 1881		24,094,100 95
Interest on Sinking Funds		262,500 00
420 land grant bonds redeemed with proceeds of land sales		420,000 00
Dividend, Wells, Fargo & Co.		20,000 00
Stock sold		592,656 40
Balance	20,497,806 83	
	$42,142,056 81	$42,142,056 81

January 1, 1881—Balance brought down $20,497,806 83

DESCRIPTION OF ROAD.

1.	Date when the road or portions thereof were opened for public use: Same as report for 1880.	
2.	Length of main line of road from San Francisco to Ogden	872.0769
	Length of main line in California	273.7069
	Length of main line in other States	598.3700
	Names and description of; single or double track:	
	Oregon branch, single track	152.1009
	Visalia branch, single track	146.0796
	San José branch, single track	17.5363
	Oakland branch, single track	5.6598
	Alameda branch, single track	11.0190
6.	Total length of branches owned by the company	332.3956
7.	Total length of branches owned by the company in California	332.3956
10.	Total length of road belonging to this company	1,204.4725
11.	Aggregate length of siding and other tracks not enumerated above	200.2999
12.	Same in California	135.2081
13.	Aggregate length of track belonging to this company, computed as single track	1,404.7724
14.	Same in California	741.3106
15.	Total length of steel rail in tracks belonging to this company, not including steel top rail; (weight per yard, fifty and sixty pounds)	1,308.5366
16.	Number of spans of bridges of twenty-five feet and upwards, in California	203
	Number of spans of bridges of twenty-five feet and upwards, outside State	12
18.	Number of wooden bridges (aggregate length, 100,839 feet), in California	657
	Number of wooden bridges (aggregate length, 5,741 feet), outside State	182

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Bridges Built Within the Year in California.

Location.	Kind.	Material.	Length.	When Built.
San Joaquin River, between Bantas and Lathrop	Straining beam truss	Wood	640	Dec., 1881.
Bear River, Oregon Branch	Straining beam truss	Wood	960	Dec., 1881.
Bear River, Oregon Branch	Piling	Wood	95.5	Dec., 1881.
Near Yuba Station	Piling	Wood	560	Dec., 1881.
Yuba River	Straining beam truss	Wood	193.2	Dec., 1881.

Miles of embankment replaced by bridges or trestle work, during year, in California, at crossing of Yuba and Bear Rivers, Oregon Branch ..... .1821 miles.

19. Number of crossings of highways at grade, in California 506
Number of crossings of highways at grade, outside State 204
20. Number of crossings of highways over railroad, in California 1
21. Number of crossings of highways under railroad, in California 9
22. Number of highway bridges eighteen feet above track, in California 1
24. Number of highway crossings at which gates or flagmen are maintained in California 2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California 504
Number of highway crossings at which there are neither electric signals, gates, nor flagmen, outside State 204
27. Number of railroad crossings at grade 14
One crossing of local line at Oakland Point, connecting with the Northern Railway on Cedar Street and Railroad Avenue.
One crossing of local line to Long Wharf.
One crossing of Alameda Branch at Alice Street.
One crossing San Pablo and Tulare Railroad at Tracy.
One crossing South Pacific Coast Railroad (Narrow Gauge) at Alameda.
One crossing South Pacific Coast (Narrow Gauge) at First and Webster Streets, Oakland.
One crossing South Pacific Coast (Narrow Gauge) at Seventh and Webster Streets, Oakland.
One crossing Stockton and Copperopolis Railroad, Stockton.
One crossing Sacramento and Placerville Railroad at Brighton.
One crossing California Pacific Railroad at Sacramento.
One crossing Oroville Railroad at Marysville.
One crossing Utah Central Railroad at Ogden.
Two crossings of main line of Cedar Street, Oakland (one temporary, leading to round-house).
(There are, also, five street railroad crossings in Oakland and Alameda.)
28. Number of railroad crossings over other roads:
Nevada County Narrow Gauge Railroad at Colfax 1

ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY UNDER LEASE OR CONTRACT.

Names, Description, and Length of Each.

Name of Company.	Termini. From—	Termini. To—	Length. (Miles).	Dates of Lease. From—	Dates of Lease. To—	Amount of Rental.
Southern Pacific	Huron	Yuma	528.56	Jan. 1, 1880	Five years.	$250 per mile per month.
Southern Pacific	Los Angeles	Wilmington	21.64	Jan. 1, 1880		
Southern Pacific of Arizona	Yuma	New Mexico	384.17	Nov. 1, 1880	Five years.	$135 per mile per month.
Southern Pacific of New Mex.	New Mexico	Rio Grande	107.22	Nov. 1, 1880		
Galveston, Harrisburg & San A.	Rio Grande	Chispa	147.11	Oct. 9, 1881	Till complete to San Antonio.	$83 33 per mile per month.
California Pacific	Vallejo Junction	Vallejo	2.00	Jan. 1, 1880	July 1, 1905.	$600,000 per annum.
	Vallejo	Sacramento	60.39			
	Davis	Knights	18.37			
	Napa Junction	Calistoga	34.48			
	West Oakland	Near Martinez				
Northern Railway	Woodland	Willows	112.61	Jan. 1, 1880	Five years.	$570,000 per annum.
	Port Costa	Suisun				
San Pablo and Tulare R. R.	Near Martinez	Tracy	46.61	Nov. 1, 1880	Five years.	$1,083 per month and taxes.
Los Angeles and Independence	Los Angeles	Santa Monica	16.83	Nov. 1, 1880	Five years.	$2,783 per month and taxes.
Los Angeles and San Diego	Florence	Santa Ana	27.83	Nov. 1, 1880	Five years.	$1,000 per month.
Pacific Improvement Co	Colorado River	Bridge	.13	Notice		Jan., $600; Feb. 1 to May 16, $1,000 per month; May 17 to Dec. 31, $600 per month.
Sacramento and Placer R. R.	Sacramento	Brighton	5.64			
Berkeley Branch R. R.	Shell Mound	Berryman	3.84	Nov. 1, 1880	Ten years.	$768 per month and taxes.
Stockton and Copperopolis	Stockton	Milton	49.00	Jan. 1, 1875	Jan. 1, 1905.	The principal and interest on one thousand five per cent $500 bonds, thirty years, and net earnings over all expenses, to apply to floating debt of Stockton and Copperopolis R. R.
	Peters	Oakdale				
Amador Branch	Galt	Ione	27.20	Nov. 1, 1880	Five years.	$3,500 per month and taxes; 2d. Five years @ $4,000 per month and taxes.
Union Pacific	Ogden	Five miles west	5.00	June 30, 1874	June 30, 2874.	The same rate per mile as the Union Pacific earn net per mile on the line of its own road operated by itself.
Bridge crosses Rio Grande			.23			
			1,658.96			

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31. Total length of above roads	1,658.96
32. Total length of above roads in California	955.10
33. Total length of above roads in other States:	
Utah	5.00
Arizona	384.30
New Mexico	167.45
Texas	147.11
34. Total miles of road operated by this company, average per year	2,707.42
35. Total miles of road operated by this company in California	1,563.06
36. Number of stations on all roads operated by this company	472
37. Number of stations on all roads owned by this company	234
38. Same in California	151
39. Miles of telegraph on line of road operated by this company	2,730
40. Miles of telegraph owned by this company	1,227
41. Number of telegraph offices in company stations	178
43. Number of telegraph stations operated jointly by railroad and telegraph companies	178

ROLLING STOCK.

	No.	Average Weight.
1. Locomotives	227	
Average weight of engines in working order		65,697
Maximum weight of engines in working order [80,000]		
2. Tenders	223	
Average weight of tenders full of fuel and water		50,000
Maximum weight of tenders full of fuel and water [70,000]		
Average joint weight of engines and tenders		115,697
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [44.70 feet]		
4. Total length of heaviest engine and tender over all [53.70 feet]		
5. Snow plows	9	38,384
6. Passenger cars	261	
Average weight		40,740
Maximum weight [63,000]		
7. Mail, baggage, and express cars	56	36,920
8. Eight-wheel box freight cars	2,554	19,000
10. Eight-wheel platform cars	2,016	15,000
12. Other cars: Caboose, 79; station, 16; officers', 5	100	
Coal and gravel dump, 136; hand, 191; section, 298	624	
Service	17	

NOTE.—There is no market value for rolling stock in California.

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	4,570
15. Number of locomotives equipped with train brakes—kind of brake: Westinghouse air	93
16. Number of cars equipped with train brakes—kind of brake: Westinghouse air	299
17. Number of passenger cars with Miller platform and buffer	261

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	2,706,780
2. Rate of speed of express passenger trains, including stops	14 to 30 miles.
3. Rate of speed of accommodation trains, including stops	20 to 25 miles.
4. Miles run by freight trains	5,797,758.
6. Rate of speed of accommodation freight trains, including stops	7 to 12 miles.
7. Miles run by other trains, and for what purpose:	
Switching	1,175,244
Work trains	767,274
8. Total train miles run	10,447,056
12. Number of tons freight carried (not including gravel)	2,672,787
Number of tons freight from other States, carried	276,807
Number of tons freight in this State, carried	2,395,980
Number of tons freight produced in this State, carried	1,557,387
Number of tons of each class of freight, produced in this State, carried—(approximate):	
Products of vine and orchard	77,869

Products of field	622,954
Products of mines	155,738
Products of forests	233,608
Live stock	140,165
Hides	3,893
Honey	778
Ice	23,360
Wool	23,360
Salmon	3,893
Manufactures	93,443
13. Total freight mileage, or tons carried one mile	Impossible to give at this date.
14. Freight mileage to and from other roads	
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare):	
Main line, single fare, Fruitvale	.02⅔ cents.
Ferry, single fare, Alameda	.0105 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	Impossible to give at this date.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	
18. Average rate of fare per mile received from passengers to and from other roads	
20. Average rate of fare per mile for all passengers	
21. Highest rate of freight per ton per mile for any distance	15 cents.
22. Lowest rate of freight per ton per mile for any distance	.00$\frac{48}{100}$ cents.
23. Average rate of local freight per ton per mile on roads operated by this company	Impossible to give at this date.
24. Average rate of freight per ton per mile to and from other roads	
25. Average rate of freight per ton per mile for all	
Average rate of freight per ton per mile, products of this State	
Average rate of freight per ton per mile, products of other States	
30. Number of persons regularly employed by company, including officers	9,549
Average monthly pay of employés, other than officers	$62 87
Average monthly pay of engine drivers	124 43
Average monthly pay of passenger conductors	100 to 115 00
Average monthly pay of freight conductors	85 to 100 00
Average monthly pay of baggagemasters	75 00
Average monthly pay of brakemen, flagmen, and switchmen	65 to 80 00
Average monthly pay of section men (white)	49 76
Average monthly pay of mechanics in shops	74 23
Average monthly pay of laborers at stations (white)	60 00

Relating to Passengers.

2. Passengers to San Francisco (including season)	Impossible to give at this date.
3. Passengers from San Francisco (including season)	

LIST OF ACCIDENTS IN CALIFORNIA.

	From causes beyond their own control—in California.		From their own misconduct or carelessness—in California.		Total—In California.		Total on whole road operated.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers		10	3	24	3	34	4	41
Employés	4	33	19	168	23	201	32	262
Others			29	59	29	59	39	65
Totals	4	43	51	251	55	294	75	368

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STATEMENT OF EACH ACCIDENT IN CALIFORNIA.

Date.	Passenger, Employé, or Trespasser.	Cause of Accident.	Extent of Injury.
January 1	Employé	Throwing switch	Finger slightly injured.
January 1	Employé	Jumping off engine	Ankle sprained.
January 3	Passenger	Fell from train	Severely bruised.
January 4	Employé	Wood fell from tank	Face bruised.
January 4	Employé	Coupling cars	Severely squeezed.
January 4	Employé	Coupling cars	Spine injured.
January 4	Employé	Fell off car	Back sprained.
January 5	Employé	Struck against tunnel	Slightly cut.
January 5	Employé	Coupling cars	Shoulder bruised.
January 6	Employé	Coupling cars	Chest bruised.
January 7	Employé	Fell from tender	Shoulder dislocated.
January 7	Employé	Switching collision	Serious bodily injuries.
January 7	Employé	Switching collision	Serious bodily injuries.
January 8	Employé	Coupling cars	Slightly injured.
January 9	Employé	Coupling cars	Finger bruised.
January 13	Employé	Coupling cars	Thumb and fingers inj'd.
January 19	Trespasser	Asleep on track and run over	Instantly killed.
January 21	Trespasser	On track and run over	Instantly killed.
January 26	Trespasser	Getting on engine	Foot bruised.
January 26	Employé	Fell off train	Back bruised.
January 27	Employé	Coupling cars	Foot bruised.
January 28	Passenger	Jumped from train	Leg broken.
January 29	Employé	Coupling cars	Hand severely injured.
January 30	Employé	Coupling cars	Instantly killed.
January 30	Employé	Getting on train	Head cut.
January 30	Employé	Squeezed against car	Severely bruised.
January 31	Employé	Falling off car	Slightly bruised.
January 31	Employé	On track and run over	Instantly killed.
January 31	Employé	Struck by train	Seriously injured.
February 1	Employé	Coupling cars	Chest injured.
February 2	Passenger	Switching collision	Wrist injured.
February 4	Employé	Slipped off engine	Side injured.
February 4	Employé	Handling brakes	Severe internal injuries.
February 5	Employé	Wheel broke	Knee injured.
February 9	Employé	Coupling cars	Hand severely injured.
February 16	Trespasser	Getting on train	Both legs amputated.
February 18	Trespasser	Getting on train	Instantly killed.
February 19	Employé	Handling brakes	Wrist sprained.
February 21	Employé	Coupling cars	Thumb amputated.
February 22	Employé	Coupling cars	Finger amputated.
February 22	Trespasser	Jumped off train	Head injured.
February 23	Employé	Struck by train	Head cut and bruised.
February 24	Employé	On track and run over	Instantly killed.
February 24	Employé	Car obstructed track	Slightly injured.
February 24	Employé	Coupling cars	Legs bruised.
February 25	Trespasser	On track and run over	Fatally injured.
March 2	Employé	Coupling cars	Hand injured.
March 3	Employé	Caught by dump car	Foot bruised.
March 7	Employé	Fell off car	Slightly bruised.
March 8	Trespasser	Struck by train	Head bruised.
March 11	Employé	Fell off train	Shoulder injured.
March 13	Employé	Fell off train	Instantly killed.
March 17	Employé	Struck against corral	Slightly bruised.
March 17	Trespasser	Fell off train	Face bruised.
March 20	Trespasser	Fell off train	Fatally injured.
March 20	Trespasser	Struck by train	Head injured.
March 20	Employé	Coupling cars	Fingers bruised.
March 20	Employé	Struck against sheds	Shoulder fractured.
March 21	Employé	Coupling cars	Thumb injured.
March 23	Trespasser	On track and run over	Fatally injured.
March 24	Employé	Coupling cars	Thumb bruised.
March 24	Employé	Coupling cars	Fatally injured.
March 26	Employé	Fell from trestle	Hip bruised.
March 27	Trespasser	Getting on train	Bruised.

STATEMENT OF EACH ACCIDENT IN CALIFORNIA—Continued.

Date.	Passenger, Employé, or Trespasser.	Cause of Accident.	Extent of Injury.
March 31	Trespasser	On track and run over	Instantly killed.
April 1	Passenger	Getting on train	Severely injured.
April 6	Employé	Getting on train	Shoulder dislocated.
April 6	Passenger	Walked off train asleep	Face slightly cut.
April 7	Trespasser	Fell off brake beam	Severely bruised.
April 8	Employé	Fell from car	Bruised.
April 9	Employé	Train fell through trestle	Instantly killed.
April 9	Employé	Train fell through trestle	Instantly killed.
April 9	Employé	Train fell through trestle	Slightly bruised.
April 9	Employé	Train fell through trestle	Slightly bruised.
April 9	Employé	Train fell through trestle	Slightly bruised.
April 9	Employé	Train fell through trestle	Leg fractured.
April 9	Employé	Train fell through trestle	Slightly injured.
April 9	Passenger	Train fell through trestle	Severely injured.
April 9	Passenger	Train fell through trestle	Severely injured.
April 9	Passenger	Train fell through trestle	Face bruised.
April 9	Passenger	Train fell through trestle	Back sprained.
April 9	Trespasser	Jumped off train	Wrist sprained.
April 12	Employé	Coupling cars	Bone in chest broken.
April 12	Employé	Struck by train	Severely bruised.
April 13	Employé	Fell off car	Face cut and bruised.
April 13	Trespasser	Buggy obstructed track	Face bruised.
April 14	Trespasser	Getting off train	Slightly bruised.
April 14	Employé	Getting off engine	Slightly cut and bruised.
April 16	Trespasser	Getting on train	Foot injured.
April 16	Employé	Coupling cars	Finger injured.
April 16	Employé	Unloading freight	Toe slightly injured.
April 18	Employé	Getting on train	Slightly injured.
April 18	Passenger	Jumped off train	Slightly injured.
April 20	Employé	Unloading freight	Back sprained.
April 24	Trespasser	Jumped from train	Foot crushed.
April 26	Employé	Coupling cars	Finger injured.
April 29	Trespasser	Crossing over cars	Foot crushed.
May 2	Trespasser	Driving across track	Instantly killed.
May 2	Trespasser	Driving across track	Instantly killed.
May 2	Trespasser	Driving across track	Instantly killed.
May 2	Trespasser	Driving across track	Instantly killed.
May 2	Trespasser	Driving across track	Instantly killed.
May 2	Employé	Coupling cars	Finger injured.
May 6	Employé	Handling freight	Eye injured.
May 6	Trespasser	Jumped off train	Shoulder sprained.
May 7	Employé	Unloading freight	Ankle sprained.
May 9	Trespasser	Jumped from train	Head bruised.
May 9	Trespasser	Getting on train	Fatally injured.
May 11	Employé	Coupling cars	Chest injured.
May 14	Passenger	Finger caught in door	Slightly injured.
May 15	Employé	Getting on train	Foot injured.
May 15	Employé	Handling brakes	Ankle sprained.
May 16	Trespasser	Driving across track	Slightly bruised.
May 18	Employé	Coupling cars	Fingers injured.
May 18	Employé	Coupling cars	Thumb and finger ampu'd.
May 20	Trespasser	Hand caught in car door	Fingers injured.
May 21	Trespasser	Jumped off train	Ankle sprained.
May 21	Employé	Coupling cars	Fingers injured.
May 21	Employé	Misplaced switch	Slightly injured.
May 21	Trespasser	On track and run over	Instantly killed.
May 23	Employé	Fell from car	Ankle sprained.
May 23	Employé	Coupling cars	Two fingers cut off.
May 25	Employé	Fell from car	Ankle sprained.
May 25	Trespasser	Driving into side of train	Slight scalp wound.
May 27	Employé	Coupling cars	Hand injured.
May 31	Employé	Handling freight	Back sprained.
May 31	Employé	Dumping on car	Foot injured.
May 31	Employé	Coupling cars	Hand bruised.
June 3	Employé	Fell from train	Wrist sprained.

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STATEMENT OF EACH ACCIDENT IN CALIFORNIA—Continued.

Date.	Passenger, Employé, or Trespasser.	Cause of Accident.	Extent of Injury.
June 4	Employé	Coupling cars	Hand injured.
June 4	Trespasser	Getting on train	Foot severely injured.
June 7	Employé	Fell between cars	Face bruised.
June 7	Employé	Struck by engine	Hand injured.
June 8	Employé	Coupling cars	Instantly killed.
June 9	Trespasser	Struck by train	Head cut and bruised.
June 10	Passenger	Jumped from train	Leg bruised.
June 11	Employé	Coupling cars	Fatally injured.
June 11	Passenger	On track and run over	Dangerously injured.
June 12	Trespasser	Asleep on track and run over	Instantly killed.
June 13	Employé	Getting on cars	Internal injuries.
June 16	Passenger	Jumped from train	Finger injured.
June 16	Employé	Throwing switch	Teeth knocked out.
June 16	Employé	Switching collision	Finger slightly injured.
June 18	Employé	Wood falling down	Leg bruised.
June 20	Employé	Fell off car	Found dead.
June 20	Trespasser	Fell off some train	Found dead.
June 22	Trespasser	Jumped from train	Head bruised.
June 22	Trespasser	Struck by train	Dangerously injured.
June 22	Trespasser	Struck by train	Shoulder bruised.
June 23	Employé	Wood falling down	Slightly bruised.
June 28	Passenger	Switching collision	Slightly injured.
June 29	Employé	Fell from train	Instantly killed.
June 29	Employé	Getting on train	Arm amputated.
June 30	Employé	Fell between cars	Leg slightly injured.
July 2	Employé	Loading ties	Rib fractured.
July 2	Employé	Coupling cars	Finger injured.
July 4	Employé	Getting on engine	Ankle sprained.
July 4	Employé	Coupling cars	Finger amputated.
July 4	Passenger	Fell from train	Fatally injured.
July 5	Trespasser	Jumped from train	Face scratched.
July 6	Employé	Coupling cars	Fatally injured.
July 6	Trespasser	Struck by train	Head cut and bruised.
July 7	Trespasser	Struck by train	Severely bruised.
July 9	Trespasser	Fell off train	Foot amputated.
July 10	Employé	Struck against mail catcher	Face bruised.
July 11	Employé	Fell off train	Arm and leg injured.
July 11	Employé	Coupling cars	Finger amputated.
July 12	Trespasser	On track and run over	Instantly killed.
July 13	Employé	Coupling cars	Finger crushed.
July 14	Employé	Fell from train	Fatally injured.
July 15	Employé	Struck against target	Severely bruised.
July 15	Employés (2)	Meeting collision	Both instantly killed.
July 15	Employés (7)	Meeting collision	All severely injured.
July 15	Employé	Meeting collision	Slightly injured.
July 15	Employé	Meeting collision	Slightly injured.
July 15	Employé	Fell from train	Instantly killed.
July 15	Employé	Coupling cars	Hand bruised.
July 19	Passenger	Caught between cars	Finger bruised.
July 19	Employé	Coupling cars	Hand bruised.
July 21	Employé	Jumped off train	Head cut.
July 24	Employé	Getting on train	Arm amputated.
July 26	Employé	Caught between cars	Both hands bruised.
July 28	Employé	Fell off car	Slightly injured.
July 30	Trespasser	Struck by train	Back bruised.
August 1	Trespasser	Meeting collision	Scalded.
August 1	Trespasser	Meeting collision	Legs scalded.
August 1	Trespasser	Struck by train	Foot injured.
August 1	Employé	Jumping off train	Hip bruised.
August 2	Trespasser	Jumping off train	Wrist dislocated.
August 3	Trespasser	Getting on train	Ankle and knee bruised.
August 3	Employé	Squeezed between cars	Instantly killed.
August 3	Employé	Struck against car	Head slightly cut.
August 6	Trespasser	Driving across track	Fatally injured.
August 6	Employé	Coupling cars	Finger bruised.

STATEMENT OF EACH ACCIDENT IN CALIFORNIA—Continued.

Date.	Passenger, Employé, or Trespasser.	Cause of Accident.	Extent of Injury.
August 8	Trespasser	Jumped off train	Knee slightly scratched.
August 8	Trespasser	Driving across track	Instantly killed.
August 8	Trespasser	Driving across track	Fatally injured.
August 8	Passenger	Fell off train	Face cut.
August 11	Trespasser	Struck by train	Hand slightly cut.
August 14	Trespasser	Jumped off train	Slightly injured.
August 15	Employé	Getting on train	Fatally injured.
August 17	Employé	Coupling cars	Finger slightly injured.
August 17	Employé	Handling brakes	Hand sprained.
August 18	Employé	Handling brakes	Foot sprained.
August 19	Trespasser	Fell from train	Fatally injured.
August 19	Employé	Fell from car	Slightly bruised.
August 20	Trespasser	Struck by train	Slightly bruised.
August 22	Employé	Coupling cars	Hand injured.
August 23	Passenger	Getting off train	Slightly bruised.
August 23	Passenger	Getting off train	Knee and hand bruised.
August 24	Employé	Coupling cars	Foot injured.
August 25	Employé	Fell from car	Hand bruised.
August 25	Trespasser	On track and run over	Found with both legs cut.
August 26	Trespasser	Team ran on side of train	Slightly injured.
August 27	Trespasser	Jumping on train	Both legs amputated.
August 27	Employé	Coupling cars	Hand bruised.
August 28	Employé	Handling brakes	Neck sprained.
August 28	Trespasser	Run over by some train	Found dead.
August 28	Employé	Coupling cars	Finger bruised.
August 29	Employé	Coupling cars	Finger injured.
August 30	Employé	Coupling cars	Finger crushed.
August 30	Employé	Coupling cars	Finger injured.
August 31	Employé	Moving cars	Foot severely injured.
August 31	Employé	Struck against sheds	Head injured.
August 31	Employé	Coupling cars	Fatally injured.
Sept. 1	Employé	Handling brakes	Back injured.
Sept. 1	Employe	Turning engine	Foot injured.
Sept. 2	Employé	On track and run over	Both legs injured.
Sept. 2	Trespasser	Struck by train	Bruised.
Sept. 5	Employé	Wheel broke	Leg bruised.
Sept. 6	Employé	Coupling cars	Thumb injured.
Sept. 6	Trespasser	On track and run over	Fatally injured.
Sept. 7	Trespasser	On track and run over	Instantly killed.
Sept. 7	Employé	Switching collision	Foot bruised.
Sept. 9	Employé	Coupling cars	Hand bruised.
Sept. 9	Employé	Coupling cars	Finger injured.
Sept. 10	Employé	Struck against warehouse	Slightly scratched.
Sept. 11	Passenger	Getting on train	Spine injured.
Sept. 11	Employé	Jumping off car	Foot sprained.
Sept. 12	Employé	Meeting collision	Bruised.
Sept. 12	Passenger	Meeting collision	Bruised.
Sept. 13	Employé	Fell from train	Instantly killed.
Sept. 13	Passenger	Jumped off train	Face scratched.
Sept. 15	Employé	Hand car obstructed track	Severely injured.
Sept. 15	Employé	Hand car obstructed track	Severely injured.
Sept. 15	Employé	Hand car obstructed track	Severely injured.
Sept. 15	Employé	Hand car obstructed track	Severely injured.
Sept. 15	Employé	Coupling cars	Finger bruised.
Sept. 15	Employé	Switching collision	Ankle sprained.
Sept. 16	Employé	Coupling cars	Finger injured.
Sept. 17	Employé	Coupling cars	Hand crushed.
Sept. 17	Employé	Fell from train	Instantly killed.
Sept. 20	Employé	Struck by train	Slightly cut and bruised.
Sept. 20	Employé	Fell from engine	Injured internally.
Sept. 22	Passenger	Getting on train	Scalp injured.
Sept. 22	Passenger	Switching collision	Slightly bruised.
Sept. 22	Trespasser	Fell from train	Heel injured.
Sept. 22	Employé	Fell off train	Bruised.
Sept. 25	Trespasser	On track and run over	Fatally injured.

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STATEMENT OF EACH ACCIDENT IN CALIFORNIA—Continued.

Date.	Passenger, Employé, or Trespasser.	Cause of Accident.	Extent of Injury.
Sept. 26	Trespasser	Struck by train	Cut and bruised.
Sept. 30	Passenger	Fell from train	Bruised.
October 2	Employé	Struck against tunnel	Head cut.
October 2	Employé	Coupling cars	Head injured.
October 2	Passenger	Jumped off train	Head slightly cut.
October 4	Trespasser	Jumped off train	Head cut.
October 4	Employé	Coupling cars	Fingers injured.
October 6	Employé	Coupling cars	Fingers injured.
October 7	Trespasser	Jumped off train	Slightly bruised.
October 7	Trespasser	Struck by train	Found dead.
October 10	Employé	Coupling cars	Head injured.
October 12	Employé	Train broke apart	Shoulder bruised.
October 13	Employé	Coupling cars	Hand injured.
October 15	Employé	Coupling cars	Hand injured.
October 15	Employé	Jumping off car	Foot sprained.
October 17	Trespasser	Struck by engine	Fatally injured
October 17	Employé	Getting on train	Side bruised.
October 17	Trespasser	Struck by engine	Foot injured.
October 18	Trespasser	Jumping on train	Foot injured.
October 18	Trespasser	Jumping off train	Face scalded.
October 18	Employé	Struck by train	Severely bruised.
October 21	Passenger	Rolled over on track	Slightly bruised.
October 21	Employé	Coupling cars	Fingers injured.
October 21	Trespasser	Driving across track	Slightly bruised.
October 22	Employé	Coupling cars	Fingers injured.
October 28	Passenger	Jumping from train	Severely injured.
October 30	Employé	Coupling cars	Hand injured.
October 31	Trespasser	Fell between cars	Hand cut off.
Nov. 2	Employé	Coupling cars	Finger injured.
Nov. 2	Employé	Getting on train	Foot injured.
Nov. 4	Employé	Coupling cars	Finger injured.
Nov. 4	Trespasser	Struck by train	Fatally injured.
Nov. 6	Employé	Coupling cars	Fatally injured.
Nov. 7	Employé	Fell off engine	Ankle sprained.
Nov. 7	Trespasser	Struck by train	Foot injured.
Nov. 8	Trespasser	Struck by train	Arm and leg broken.
Nov. 9	Employé	Struck against sheds	Head and nose cut.
Nov. 9	Employé	Coupling cars	Fingers injured.
Nov. 10	Employé	Coupling cars	Foot injured.
Nov. 10	Passenger	Getting on train	Leg bruised.
Nov. 11	Employé	Turning engine	Ankle sprained.
Nov. 12	Employé	Caught between cars	Foot injured.
Nov. 14	Passenger	Overtaking collision	Arm fractured.
Nov. 15	Employé	Handling freight	Leg bruised.
Nov. 16	Employé	Train off track	Severely bruised.
Nov. 16	Trespasser	Getting off train	Both feet amputated.
Nov. 17	Employé	Fell from train	Slightly injured.
Nov. 18	Employé	Hand car obstruction	Knee injured.
Nov. 18	Employé	Coupling cars	Finger injured.
Nov. 21	Passenger	Jumping off train	Ankle sprained.
Nov. 22	Employé	Coupling cars	Slightly injured.
Nov. 23	Passenger	Jumped off train	Fatally injured.
Nov. 23	Passenger	Jumping from train	Head and face scratched.
Nov. 25	Employé	Struck against fence	Head cut.
Nov. 25	Employé	Coupling cars	Fatally injured.
Nov. 26	Trespasser	Attempting to couple cars	Finger injured.
Nov. 27	Trespasser	Jumping on train	Foot severely injured.
Nov. 29	Employé	Moving a car	Severely bruised.
Nov. 30	Employé	Struck against chute	Slightly bruised.
Dec. 3	Employé	Jumping off train	Instantly killed.
Dec. 4	Employé	Rock fell on track	Shoulder dislocated.
Dec. 5	Employé	Coupling cars	Bruised.
Dec. 5	Employé	Struck by engine	Arm injured.
Dec. 6	Employé	Struck against bridge	Severely injured.
Dec. 6	Trespasser	Jumped off train	Stunned.

STATEMENT OF EACH ACCIDENT IN CALIFORNIA—Continued.

Date.	Passenger, Employé, or Trespasser.	Cause of Accident.	Extent of Injury.
Dec. 6	Trespasser	Trying to couple cars	Hand injured.
Dec. 6	Trespasser	Fell off train	Instantly killed.
Dec. 8	Employé	Struck against a post	Ankle sprained.
Dec. 10	Passenger	Fell from train	Slightly bruised.
Dec. 11	Employé	Wooding up	Ankle sprained.
Dec. 15	Employé	Getting on train	Ankle sprained.
Dec. 15	Passenger	Train breaking apart	Slight injuries.
Dec. 15	Employé	Struck by train	Arm bruised.
Dec. 18	Employé	Coupling cars	Hand injured.
Dec. 20	Employé	Switching collision	Foot bruised.
Dec. 22	Employé	Getting on engine	Knee bruised.
Dec. 23	Employé	Coupling cars	Slightly injured.
Dec. 24	Employé	Coupling cars	Hand injured.
Dec. 24	Employé	Coupling cars	Bruised.
Dec. 25	Passenger	Jumping off train	Slightly bruised.
Dec. 29	Employé	Handling freight	Hand bruised.
Dec. 30	Passenger	Jumping off train	Slightly bruised.
Dec. 31	Employé	Coupling cars	Finger injured.

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12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Series.	Date.	Due.	In what Money Payable—Interest and Principal.	Interest. Rate.	Interest. Payable.	Authorized Amount.	Total Issued and Outstanding December 31, 1881.
Convertible mortgage	------	Dec. 1, 1862	Jan. 1, 1883	U. S. coin	7 per cent.	Jan. and July	$1,500,000	$7,000
California State aid	------	July 1, 1864	July 1, 1884	U. S. coin	7 per cent	Jan. and July	1,500,000	1,500,000
Central Pacific, first mortgage	A	July 1, 1865	July 1, 1895	U. S. coin	6 per cent.	Jan. and July	3,000,000	2,995,000
Central Pacific, first mortgage	B	July 1, 1866	July 1, 1896	U. S. coin	6 per cent.	Jan. and July	1,000,000	1,000,000
Central Pacific, first mortgage	C	July 1, 1866	July 1, 1896	U. S. coin	6 per cent.	Jan. and July	1,000,000	1,000,000
Central Pacific, first mortgage	D	July 1, 1866	July 1, 1896	U. S. coin	6 per cent.	Jan. and July	1,390,000	1,383,000
Central Pacific, first mortgage	E	Jan. 1, 1867	Jan. 1, 1897	U. S. coin	6 per cent.	Jan. and July	4,000,000	3,997,000
Central Pacific, first mortgage	F	Jan. 1, 1868	Jan. 1, 1898	U. S. coin	6 per cent.	Jan. and July	4,000,000	3,999,000
Central Pacific, first mortgage	G	Jan. 1, 1868	Jan. 1, 1898	U. S. coin	6 per cent.	Jan. and July	4,000,000	3,999,000
Central Pacific, first mortgage	H	Jan. 1, 1868	Jan. 1, 1898	U. S. coin	6 per cent.	Jan. and July	4,000,000	3,999,000
Central Pacific, first mortgage	I	Jan. 1, 1868	Jan. 1, 1898	U. S. coin	6 per cent	Jan. and July	3,525,000	3,511,000
Western Pacific (old issue)	------	Dec. 1, 1865	Dec. 1, 1895	U. S. coin	6 per cent.	June and Dec.		112,000
Western Pacific, first mortgage	A	July 1, 1869	July 1, 1899	U. S. coin	6 per cent.	Jan. and July	1,970,000	1,858,000
Western Pacific, first mortgage	B	July 1, 1869	July 1, 1899	U. S. coin	6 per cent.	Jan. and July	765,000	765,000
California and Oregon	A	Jan. 1, 1868	Jan. 1, 1888	U. S. coin	6 per cent.	Jan. and July	6,000,000	6,000,000
Central Pacific, Cal. and Or. Div.	B	Jan. 1, 1872	Jan. 1, 1892	U. S. coin	6 per cent.	Jan. and July	7,200,000	2,080,000
S. F., Oakland, and Alameda	------	July 1, 1870	July 1, 1890	U. S. coin	8 per cent.	Jan. and July	1,500,000	687,000
San Joaquin Valley	------	Oct. 1, 1870	Oct. 1, 1900	U. S. coin	6 per cent.	April and Oct.	6,080,000	6,080,000
Land grant	------	Oct. 1, 1870	Oct. 1, 1890	U. S. coin	6 per cent.	April and Oct.	10,000,000	6,660,000
Income	------	May 1, 1878	May 1, 1888	U. S. coin	8 per cent.	May and Nov.	6,000,000	3,285,000
Totals							$68,430,000	$54,017,000

TABLE A—Continued.

Character of—	Bonds Redeemed During Year Ending December 31, 1881. Amount.	Cost.	Discount or Premium.
Convertible mortgage bonds	$335,000	$335,000 00	
Land grant bonds	420,000	452,528 90	$32,528 90
	$755,000	$787,528 90	$32,528 90

NOTE.—There were no bonds sold in 1881.

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12. TABLE B. U. S. GOVERNMENT BONDS ISSUED TO THE COMPANY.

Bonds.			Payable in Coin or Currency.		Interest.		Bonds.			Remarks.
Character of.	Date of.	Due.	Principal	Interest	When Payable.	Rate.	Amount.	Proceeds of Sale in Currency.	Premium.*	
U. S. Bonds, Currency, 6 per cent	1865 to 1872	30 years from date	U. S. Currency		Jan. and July	6	$25,885,120			
Issued to Western Pacific Railroad Co.										
U. S. Bonds, Currency, 6 per cent	1867 to 1872	30 years from date	U. S. Currency		Jan. and July	6	1,970,560			
Total							$27,855,680	$27,989,834	$134,274	120 unsold.

* Premium received was credited to Construction Account.

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1881.										
			Single.		Length of Roadway—Single and Double Track.			Reduced to Single Track.					
								Track.		Sidings.	Track and Sidings.		
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Iron. (b)	Steel. (c)	Iron and Steel.
Main line without State	State line	Terminus	285.8184	312.8184	285.8184	312.5516	598.3700	285.8184	312.5516	65.0918	350.9102	312.5516	663.4618
Main line within State	Oakl'd Wh'rf	State line	38.0255	235.6814	38.0255	235.6814	273.7069	38.0255	235.6814	101.2646	139.2901	235.6814	374.9715
Oregon Branch	Roseville	Redding	139.1125	12.3884	139.7125	12.3884	152.1009	139.7125	12.3884	20.3572	160.0697	12.3884	172.4581
Visalia	Lathrop	Goshen	70.4188	75.6608	70.4188	75.6608	146.0796	70.4188	75.6608	11.5170	81.9358	75.6608	157.5966
San José	San José	Niles	11.6380	5.8983	11.6380	5.8983	17.5363	11.6380	5.8983	0.9800	12.6180	5.8983	18.5163
Oakland	Oakl'd Wh'rf	Brooklyn		5.6598		5.6598	5.6598		5.6598	0.0335	0.0335	5.6598	5.6933
Alameda	Alameda	Alameda Wh. / Melrose / Fruitvale / Brooklyn	4.5910	6.4280	4.5910	6.4280	11.0190	4.5910	6.4280	1.0558	5.6468	6.4280	12.0748
Total on whole road, December 31, 1881			550.2042	654.2683	550.2042	654.2683	1,204.4725	550.2042	654.2683	200.2999	750.5041	654.2683	1,404.7724
Total constructed during year (net increase)										2.1782	2.1782		2.1782
Total within the State constructed during year										0.9186	0.9186		0.9186
Total without the State constructed during year										1.2596	1.2596		1.2596

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TABLE C—Continued.

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1881.		
	Within State.	Without State.	Total.
	Length in Miles.	Length in Miles.	Length in Miles.
Length of iron rails	799.1878	701.8204	1,511.0082
Length of steel rails	683.4334	625.1032	1,308.5366

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1881.								
	Within State.			Without State.			Total.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Total length of iron rail laid during the year in construction (net increase)	1.8372			2.5192			4.3564		
Total length of iron rail replaced by steel rail during the year (removal and repairs)	89.9010	39.3244	3,535.3067	170.6036	47.1427	8,046.9478	206.5946	44.4454	11,582.2545

TABLE D.

Grants or Donations, in Bonds or Money, from States, Counties, Towns, Corporations, or Individuals, not Repayable by Company.

Bonds.		Interest Payable.	Total Amount of Bonds or Cash	Disposed of.			Interest accrued to Company December 31, 1881	Remarks.
Character of.		By Whom.		Amount of Bonds.	Cash Realized.	Discount.		
San Francisco County bonds*		San Francisco County	$400,000	$400,000	$321,752 75	$78,247 25	$27,865 00	The amount received for the sale of these bonds and the interest accrued to the company has been credited to the construction account.
San Francisco County bonds†		San Francisco County	250,000	250,000	175,000 00	75,000 00		

*The above 400 bonds were issued to the Central Pacific Railroad Company as a compromise of a claim of the company against the City and County of San Francisco, but were not a donation.

†The above 250 bonds were issued to the Western Pacific Railroad Company under the same circumstances as the above 400 bonds were issued to the Central Pacific Railroad Company.

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TABLE E. OTHER AIDS OR GRANTS, FROM THE UNITED STATES, STATES, COUNTIES, CORPORATIONS, OR INDIVIDUALS.

Lands granted by the United States Government.

To What Railroad Company.	Acres per Mile.	Number of Miles.	Number of Acres.			Estimated Value.	
			Total.	Less Reserved by Government.	Net Total.	Per Acre.	Total.
Central Pacific	12,800	742	9,497,600	1,500,000	7,997,600	$2 50	$19,994,000 00
Western Pacific	12,800	123.38	1,579,264	1,153,264	426,000	2 50	1,065,000 00
California and Oregon	12,800	291	3,724,800		3,724,800	2 50	9,312,000 00
					12,148,400		$30,371,000 00

NOTE.—The Western Pacific Railroad Company had disposed of its lands prior to its consolidation into this company.

Lands or property, including right of way donated by States, counties, towns, corporations, or individuals, stating in detail the amount of land granted for right of way, for stations, for shops, for storehouses, etc.

By Whom Donated.	Description of Property.
Sacramento City	20 $\frac{6}{10}$ acres in the slough at Sacramento City.
Oakland Water Front Company	Land, Oakland water front.
State of California	Half interest in Mission bay lands, San Francisco.

NOTE.—No donations of lands or property other than is specified above in Tables D and E have ever been made to the company, except lands for right of way, stations, shops, and storehouses. In most instances the land for right of way, stations, etc , were procured by the contractors.

Bonds whereof principal is payable by company—Interest by State or other parties.

Character of.	Date When—		Amount.	Interest.	
	Issued.	Due.		Rate.	By Whom Payable.
Central Pacific	July 1, 1864	July 1, 1884	$1,500,000	7	State of California.

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TABLE F. SALES OF LANDS GRANTED BY UNITED STATES GOVERNMENT.

Total sales and accrued interest, in currency and coin.

	Acres Sold.	Average Price.	Amount.		
			Principal.	Interest Accrued.	Total.
Lands rented prior to December 31, 1881			$2,311 55		
Lands leased prior to December 31, 1881			925 00		
Lands sold prior to December 31, 1881	945,786.07	$4 75	4,501,298 67	$1,081,428 57	
Timber and stumpage prior to December 31, 1881			64,508 18		
Total to December 31, 1881	945,786.07	$4 75	$4,569,043 40	$1,081,428 57	$5,650,471 97
During the year (net)	171,544.74	$2 22	$382,222 75	$145,319 14	$527,541 89

Amounts paid and due on sales above stated—currency and coin.

	Amount Due.			Amount Paid.		
	Principal.	Accrued Interest.	Total.	Principal.	Interest.	Total.
To December 31, 1881	$1,307,498 79	$64,932 01	$1,372,430 80	$3,193,799 88	$1,016,496 56	$4,210,296 44
During year	$226,048 19	$24,943 64	$250,991 83	$524,311 35	$120,375 50	$645,612 79

NET CASH RECEIPTS IN COIN, DEDUCTING DISCOUNT ON CURRENCY AND EXPENSES.

	Coin.		
	Coin and Currency.	Less Expenses.	Net Coin Receipts.
To Dec. 31, 1881, prior to first mortgage	$427,590 35		(a) $427,590 35
Subsequent to first mortgage	3,851,376 06	Dis. $925 24	3,850,450 82
	$4,278,966 41	$925 24	$4,278,041 17

APPLICATION OF AMOUNT PLACED IN HANDS OF TRUSTEES FOR REDEMPTION OF BONDS. (TO BE STATED IN COIN.)

	Bonds Redeemed.			Total Received by Trustees.	Balance on Hand.	Discount or Premium on Bonds Redeemed.
	Number.	Amount.	Cost.			
To December 31, 1881	3,340	$3,340,000 00	$3,279,933 26	$3,850,420 82	$612,517 56	Dis. $102,066 74
During year		420,000 00	452,528 90	639,301 53		Prem. 32,528 90
Total				(b) $3,850,450 82		
Cash from sales not placed in hands of Trustees prior to first mortgage				(c) 427,590 35		
Total net receipts as above stated (a)=(b+c)				$4,278,041 17		

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Patents received to December 31, 1881—number of acres, including patents to Western Pacific	2,495,214.75
Patents received to December 31, 1881—number of acres, excluding patents to Western Pacific	2,059,593.94
Number of purchasers to December 31, 1881, excluding purchase of Western Pacific Railroad lands	4,005
Average number of acres sold to each	211 18/100

STATE OF CALIFORNIA, City and County of San Francisco. } ss.

Charles Crocker, Second Vice-President of the Central Pacific Railroad Company, and E. H. Miller, Jr., Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper offices of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

CHAS. CROCKER.
E. H. MILLER, JR.

Subscribed and sworn to before me, this ninth (9) day of March, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

HUMBOLDT LOGGING RAILWAY COMPANY.

To whom it may concern:

The Humboldt Logging Railway Company, located in Humboldt County, California, is owned by:

D. R. Jones.....Eureka, California.
H. H. Buhne.....Eureka, California.
John Kentfield.....San Francisco, California.

It extends about seven miles into the woods, and is used exclusively for transporting redwood logs, etc., and carries no freight or passengers, being used for mills at Eureka, Humboldt Bay.

WM. SUTTON, Secretary.

To the State Board of Railroad Commissioners, California.

SAN FRANCISCO, July 27, 1882.

LOS ANGELES AND INDEPENDENCE RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Charles Crocker, President.....San Francisco.
Charles F. Crocker, Vice-President.....San Francisco.
F. S. Douty, Secretary and Treasurer.....San Francisco.
W. V. Huntington.....San Francisco.
E. W. Hopkins.....San Francisco.
W. E. Brown.....San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

Corner Fourth and Townsend Streets.....San Francisco, California.

The Los Angeles and Independence Railroad Company was incorporated January 4, 1875.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$4,000,000 00
2.	Capital stock authorized by votes of company	4,000,000 00
3.	Capital stock issued (number of shares, 5,025); amount paid in	502,500 00
5.	Total amount paid in as per books of the company	502,500 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders	9
10.	Number of stockholders in California	8
11.	Amount of stock held in California	502,500 00
17.	Amount of cash, materials, and supplies on hand; sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets	19,021 00

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

3.	Superstructure, including rails	$361,124 96
4.	Land	6,032 00
	Fences	1,305 37
9.	Wharves	55,656 07
11.	Total cost of construction	$424,118 40

Equipment.

		No.	Cost.
12.	Locomotives	2	
16.	Passenger cars	3	
	Baggage cars and smoker combined	1	$86,203 05
17.	Freight cars	78	
	Other cars, track cars	10	
18.	Total for equipment		$86,203 05

PROPERTY PURCHASED, ETC.

27.	Whole amount of permanent investments	$510,321 45
28.	Property in California	510,321 45
30.	Cash and cash assets	19,021 23
31.	Total property and assets of the company	529,342 68

REVENUE FOR THE YEAR.

13.	Derived from rents for use of road and equipment when leased (January 1, 1881, to December 31, 1881)	$20,196 00

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1.	Taxes, State and local	$25 53
2.	General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	9 70

NOTE.—Taxes noted here are for personal property only. The Central Pacific Railroad Company, under its lease, pays all taxes on road and rolling stock.

Class IV—Freight traffic expenses.

13.	Total expenses	$35 23

NET INCOME, DIVIDENDS, ETC.

1.	Total net income	$20,160 77
2.	Percentage of same to capital stock and net debt	.04 1/100
3.	Percentage of same to total property and assets	.03 98/100
5.	Dividends declared for the year	11,306 25
6.	Date of last dividend declared	November 9, 1880.

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7. Balance for the year (surplus)	$8,854 52
8. Surplus at commencement of the year	10,166 71
9. Surplus at commencement of the year, as changed by aforesaid entries	10,166 71
10. Total surplus December 31, 1881	19,021 23

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

Leased and operated by the Central Pacific Railroad Company.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

Leased and operated by the Central Pacific Railroad Company.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$424,118 40
Cost of equipment	86,203 05
Balance of current accounts	19,021 23
Total	$529,342 68

Credits.

Capital stock	$502,500 00
Profit and loss (profit)	26,842 68
Total	$529,342 68

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Balance January 1, 1881		$17,988 16
Rental from January 1, 1881, to December 31, 1881		20,196 00
General expenses	$9 70	
Taxes	25 53	
Dividend No. 2	11,306 25	
Balance to 1882	26,842 68	
	$38,184 16	$38,184 16
Balance, January 1, 1882		$26,842 68

DESCRIPTION OF ROAD.

1. Date when portions of the road were opened for public use:	
From Santa Monica to Los Angeles	December, 1875.
2. Length of main line of road from Santa Monica to Los Angeles	16.83 miles.
Length of main line in California	16.83 miles.
3. Length of line with track laid, if road is not completed	Complete.
10. Total length of road belonging to this company	16.83 miles.
11. Aggregate length of siding and other tracks not enumerated above	1.5433
12. Same in California	1.5433
13. Aggregate length of track belonging to this company computed as single track	18.3733
14. Same in California	18.3733
18. Number of wooden bridges (aggregate length, 1,431 feet) in California	7
19. Number of crossings of highways at grade, in California	11
26. Number of highway crossings at which there are neither electric signals, gate, nor flagmen, in California	11
27. Number of railroad crossings at grade:	
Street railroad at Park station	1

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	2		
Average weight of engines in working order		60,000	
Maximum weight of engines in working order [60,000]			
2. Tenders	2		
Average weight of tenders full of fuel and water		25,000	
Maximum weight of tenders full of fuel and water [30,000]			
Average joint weight of engines and tenders		85,000	
6. Passenger cars	3		
Average weight		37,250	
Maximum weight [37,250]			
7. Mail and baggage cars	1	36,000	
8. Eight-wheel box freight cars	16	19,000	
10. Eight-wheel platform cars	62	15,000	
12. Other cars, track cars	10		
13. Total market value (cost)			$86,203 05

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	78
15. Number of locomotives equipped with train brakes—kind of brake:	
Vacuum	1
16. Number of cars equipped with train brakes—kind of brake:	
Vacuum	4

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.	Length of Track, December 31, 1881.											
	Single.		Length of Roadway—Single and Double Track.		Reduced to Single Track.							
					Track.		Sidings.	Track and Sidings.				
			Iron.	Iron and Steel.	Iron.	Iron and Steel.	Iron.	Iron.	Iron and Steel.			
Main Line and Branches	From—	To—										
Main line within State	Santa Monica	Los Angeles	16.83	16.83	16.83		1.5433	(b) 18.3733	18.3733			
Total on whole road, December 31, 1881			16.83									
The length of rail is double the length of single track, column (b) above.												
Length of iron rail												

December 31, 1881—Within the State.			
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
	36.7466	39.2857	1,443.6159

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Charles Crocker, President of the Los Angeles and Independence Railroad Company, and F. S. Douty, Secretary of the said company, being duly sworn, depose and say that the statements, tables, and answers contained in the foregoing twenty-six sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

CHARLES CROCKER, President.
F. S. DOUTY, Secretary.

Subscribed and sworn to before me, this twenty-fourth day of February, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

LOS ANGELES AND SAN DIEGO RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Charles F. Crocker, President	San Francisco.
N. T. Smith, Treasurer	San Francisco.
J. L. Willcutt, Secretary	Oakland.
George E. Gray, Chief Engineer	San Francisco.
A. N. Towne, Superintendent	San Francisco.
Leland Stanford	San Francisco.
E. H. Miller, Jr.	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

Los Angeles and San Diego Railroad Company ..... San Francisco, California.

The Los Angeles and San Diego Railroad Company was incorporated October 10, 1876.

CAPITAL STOCK.

1. Capital stock authorized by charter		$5,600,000 00
3. Capital stock issued [number of shares, 5,708]; amount paid in		570,800 00
5. Total amount paid in as per books of the company		570,800 00
8. Par value of shares issued		100 00
9. Total number of stockholders	9	
10. Number of stockholders in California	8	
11. Amount of stock held in California		569,800 00

DEBT.

12. Funded debt as follows:		
Bonds		$556,000 00
Interest paid on same during year	$33,360 00	
13. Total amount of funded debt		$556,000 00
16. Total gross debt liabilities		$556,000 00
17. Other securities and debt balances		$18,580 69
18. Total net debt liabilities		$537,419 31

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COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry		
2. Bridging		
3. Superstructure, including rails		
4. Land	$1,097,495 77	
Land damages		
Fences		
5. Passenger and freight stations and water stations		14,994 43
6. Engine houses and car sheds (included in track)		1,000 00
11. Total cost of construction		$1,113,490 20

PROPERTY PURCHASED, ETC.

27. Whole amount of permanent investments	$1,113,490 20
28. Property in California	1,113,490 20
30. Cash and cash assets	18,518 69
31. Total property and assets of the company	1,113,070 89

32. SINKING AND CONTINGENT FUNDS.

Showing amount of same, and their purpose.

Applicable to Redemption of what Bonds—Character.	Terms and Conditions of Funds.
First mortgage	Sinking Fund, $12,000 yearly, to commence the year 1900.

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry		
2. Bridging		
3. Superstructure, including rails		
4. Land	$626 54	
Land damages		
Fences		
5. Pasenger and freight stations and water stations		63 36
20. Net addition to property account for the year		$690 20

REVENUE FOR THE YEAR.

Operated by the Central Pacific Railroad Company, and included in its report.

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Operated by the Central Pacific Railroad Company, and included in its report.

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$5,270 89
4. Interest accrued during the year:		
On funded debt		33,360 00
7. Balance for the year (deficit)		$151 06
8. Surplus at commencement of the year		5,421 95
10. Total surplus December 31, 1881		$5,270 89

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

Operated by the Central Pacific Railroad Company, and included in its report.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

Operated by the Central Pacific Railroad Company, and included in its report.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$1,113,490 20
Current accounts	18,580 69
Total	$1,132,070 89

Credits.

Capital stock	$570,800 00
Funded debt	556,000 00
Profit and loss (profit)	5,270 89
Total	$1,132,070 89

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
To general expenses	$175 06	
To interest on bonds	33,360 00	
To balance	5,270 89	
By balance		$5,421 95
By road earnings		33,384 95
	$38,805 95	$38,805 95
By balance brought down		$5,270 89

DESCRIPTION OF ROAD.

(See previous report.)

2. Length of main line of road from Florence to Santa Ana	27.82 miles.
Length of main line in California	27.82 miles.
10. Total length of road belonging to this company	27.82 miles.
11. Aggregate length of siding and other tracks not enumerated above	2.39 miles.
12. Same in California	2.39 miles.
13. Aggregate length of track belonging to this company computed as single track	30.21 miles.
14. Same in California	30.21 miles.
19. Number of crossings of highways at grade, in California	37
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	37
37. Number of stations on all roads owned by this company	7
38. Same in California	7
40. Miles of telegraph owned by this company	27.82
41. Number of telegraph offices in company stations	4
43. Number of telegraph stations operated jointly by railroad and telegraph companies	4

MILEAGE, TRAFFIC, ETC.

Operated by the Central Pacific Railroad, and included in its report.

LIST OF ACCIDENTS IN CALIFORNIA.

If any, reported by the Central Pacific Railroad Company.

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TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Date.	Due.	In what Money Payable. Interest and Principal.	Interest.		Authorized Amount.	Total Issued December 31, 1881.	Accrued Interest During Year.	Amount of Bonds outstanding December 31, 1881.
				Rate.	Payable.				
First mortgage	July 1, 1880	July 1, 1900	Gold coin	6 per cent	January and July	$2,800,000 00	$556,000 00	$33,360 00	$556,000 00

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1881.						
			Single.	Length of Roadway—Single and Double Track.		Reduced to Single Track.			
						Track.	Sidings.	Track and Sidings.	
Main Line and Branches.	From—	To—	Iron.	Iron.	Iron and Steel.	Iron.	Iron.	Iron.	Iron and Steel.
Main line within State	Florence	Santa Ana	27.82	27.82	27.82	27.82	2.39	(b) 30.21	30.21
Total on whole road, December 31, 1881			27.82	27.82	27.82	27.82	2.39	30.21	30.21

The length of rail is double the length of single track, column (b) above.	December 31, 1881—Within the State.		
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rail	60.42	44	2,658.48

51 2

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STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Charles F. Crocker, President of the Los Angeles and San Diego Railroad Company, and J. L. Willcutt, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

CHARLES F. CROCKER.
J. L. WILLCUTT.

Subscribed and sworn to before me, this ninth (9) day of March, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

MENDOCINO RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

Charles F. Crocker, President	San Francisco.
Charles E. Green, Secretary and Treasurer	San Francisco.

NAMES OF DIRECTORS:

Charles F. Crocker	San Francisco.
Charles Goodall	San Francisco.
George C. Perkins	San Francisco.
F. S. Douty	San Francisco.
Edwin Goodall	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

Corner Fourth and Townsend Streets ..... San Francisco, California.

The Mendocino Railroad Company was incorporated October 22, 1875.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$150,000 00
3.	Capital stock issued ..... [Number of shares, 1,500]	
5.	Total amount paid in as per books of the company	112,129 22
6.	Amount of capital stock issued but not full paid ..... [1,500 shares]	
7.	Amount per share still due thereon, say $25 25	37,870 75
8.	Par value of shares issued	100 00
9.	Total number of stockholders	4
10.	Number of stockholders in California	4
11.	Amount of stock held in California	All.
	All other debts, current credit balances, etc.	$2,903 02
16.	Total gross debt liabilities	$2,903 02
	Cash on hand	$209 54
	Other securities and debt balances	1,779 29
18.	Total net debt liabilities	$1,988 83

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

11.	Total cost of construction and equipments	$105,580 18

PROPERTY PURCHASED.

27.	Whole amount of permanent investments	$105,580 18
28.	Property in California	All.
30.	Cash and cash assets	1,988 83

REVENUE FOR THE YEAR.

8.	Derived from local freight on roads operated by this company	$4,918 79
12.	Total earnings from freight department	$4,918 79
17.	Income derived from rent of property, other than road and equipment:	
	State	2 08
	Rent of buildings	39 27
19.	Total income derived from all sources	$4,960 16

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1.	Taxes, State and local	$806 92
2.	General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	2,047 81
5.	Total	$2,854 73

Class II—Maintenance of way and buildings, and movement expenses.

1.	Repairs of road (exclusive of bridges, new rails, and new ties)	$1,275 41
16.	Fuel	150 08
17.	Oil and waste	
19.	Total	$1,425 49
21.	Proportion of same to freight department	All.

Class IV—Freight traffic expenses.

9.	Total expenses of operating the road embraced in Classes I, II, III, and IV	$4,280 22
11.	Percentage of expenses to total transportation earnings	86¼
13.	Total expenses	4,280 22

NET INCOME, DIVIDENDS, ETC.

See profit and loss account.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$105,580 18
Cost of equipment	
Cash, cash assets, and other items:	
Cash	209 54
P. I. Co.	1,779 29
A. W. Hall, Superintendent	70 44
Profit and loss	7,392 79
Total	$115,032 24

Credits.

Capital stock	$112,129 22
Other debts:	
Redwood Lumber Company	2,127 46
J. Heritage, Superintendent	6 15
J. S. Kimball	11 11
Unpaid bills	138 35
Merchandise	619 95
Total	$115,032 24

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PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Repairs	$1,275 41	
Operating expenses	2,197 89	
Taxes	806 92	
Profit	679 94	
Freight and other receipts		$4,960 16
	$4,960 16	$4,960 16

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use	1876-7.
2. Length of main line of road from Cuffey's Cove to Helmke's Mill, about	4 miles.
Length of main line in California	All.
10. Total length of road belonging to this company, about	4 miles.
13. Aggregate length of track belonging to this company computed as single track, about	9 miles.
14. Same in California	All.
18. Number of wooden bridges (aggregate length, 4,079 feet), in California	30

ROLLING STOCK.

1. Locomotives	2
10. Eight-wheel platform cars	30
14. Total number of freight cars, including coal, etc., on a basis of eight wheels.	30

MILEAGE, TRAFFIC, ETC.

12. Number of tons freight carried (not including gravel)	11,405 5/100
15. Highest rate of fare per mile for any distance (excluding one mile)	No passengers carried.
21. Highest rate of freight per ton per mile for any distance	15 cents.
22. Lowest rate of freight per ton per mile for any distance	15 cents.
23. Average rate of local freight per ton per mile on roads operated by this company	10¾ cents.

STATE OF CALIFORNIA, City and County of San Francisco. } ss.

Charles E. Green, Secretary of the Mendocino Railroad Company, being duly sworn, deposes and says, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

C. E. GREEN, Secretary.

Subscribed and sworn to before me, this first day of May, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco.

MONTEREY RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

Charles Crocker, President	San Francisco.
Charles F. Crocker, Vice-President	San Francisco.
N. T. Smith, Treasurer	San Francisco.
J. S. Willcutt, Secretary	Oakland.
Geo. E. Gray, Chief Engineer	San Francisco.
N. C. Bassett, Superintendent	San Francisco.

NAMES OF DIRECTORS:

Charles Crocker	San Francisco.
Charles F. Crocker	San Francisco.
W. V. Huntington	San Francisco.
N. T. Smith	San Francisco.
J. L. Willcutt	Oakland.

BUSINESS ADDRESS OF THE COMPANY:

Corner Fourth and Townsend Streets ..... San Francisco, California.

The Monterey Railroad Company was incorporated January 24, 1880.

CAPITAL STOCK.

1. Capital stock authorized by charter	$250,000 00
3. Capital stock issued [number of shares, 2,500]; amount paid in	250,000 00
5. Total amount paid in, as per books of the company	250,000 00
8. Par value of shares issued	100 00
9. Total number of stockholders	8
10. Number of stockholders in California	7
11. Amount of stock held in California	246,000 00

DEBT.

12. Funded debt as follows:	
Bonds	$250,000 00
Interest paid on same during the year $12,500	
13. Total amount of funded debt	$250,000 00
16. Total gross debt liabilities	$250,000 00
17. Amount of cash, materials, and supplies on hand, sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:	
Securities and debt balances	$12,021 46
18. Total net debt liabilities	$237,978 54

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	
2. Bridging	
3. Superstructure, including rails	$493,472 66
4. Land	
Land damages	
Fences	
6. Engine houses and car sheds. (Turn-tables included in track)	6,000 00
7. Machine shops, including machinery and tools	500 00
8. Interest	100 00
11. Total cost of construction	$500,072 66

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Equipment.

	No.	Cost.
17. Freight cars	2	$60 00
18. Total for equipment		$60 00

27. Whole amount of permanent investments	$500,132 66
28. Property in California	$500,132 66
30. Cash and cash assets	12,021 46
31. Total property and assets of the company	$512,154 12

32. SINKING AND CONTINGENT FUNDS, SHOWING AMOUNT OF SAME AND THEIR PURPOSE.

Applicable to Redemption of what Bonds. Character.	Terms and Conditions of Funds.
First mortgage	Sinking fund, $5,000 yearly, to commence year 1882.

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry	$132 66
2. Bridging	
3. Superstructure, including rails	
4. Land	
Land damages and fences	

REVENUE FOR THE YEAR.

Operated by the Southern Pacific Railroad Company, and included in its report.

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Operated by the Southern Pacific Railroad Company, and included in its report.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$500,072 66
Cost of equipment	60 00
Cash, cash assets, and other items:	
Current accounts	12,021 46
Total	$512,154 12

Credits.

Capital stock	$250,000 00
Funded debt	250,000 00
Profit and loss (profit)	12,154 12
Total	$512,154 12

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
To general expenses	$44 00	
To taxes	3,167 60	
To interest on bonds	12,500 00	
To balance	12,154 12	
By balance, December 31, 1880		$7,465 72
By road earnings		20,400 00
	$27,865 72	$27,865 72
By balance brought down		$12,154 12

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Castroville to Morocojo	January 11, 1880.
From Morocojo to Martinez	January 11, 1880.
From Martinez to Bardins	January 11, 1880.
From Bardins to Del Monte	Sept. 12, 1881.
From Del Monte to Monterey	Sept. 12, 1881.
From Bardins to Monterey	January 11, 1880.
2. Length of main line of road from Castroville to Monterey	15.12
Length of main line in California	15.12
10. Total length of road belonging to this company	15.12
11. Aggregate length of sidings and other tracks not enumerated above	1.43
12. Same in California	1.43
13. Aggregate length of track belonging to this company computed as single track	16.55
14. Same in California	16.55
15. Total length of steel rail in tracks belonging to this company, not including steel top rail	30.24
19. Number of crossings of highways at grade, in California	5
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	5
37. Number of stations on all roads owned by this company	6
38. Same in California	6
40. Miles of telegraph owned by this company	15.4
41. Number of telegraph offices in company stations	3
43. Number of telegraph stations operated jointly by railroad and telegraph companies	3

MILEAGE, TRAFFIC, ETC.

Operated by the Southern Pacific Railroad Company, and included in its report.

LIST OF ACCIDENTS IN CALIFORNIA.

If any, reported by Southern Pacific Railroad Company.

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12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of	Date	Due	In What Money Payable.		Interest.		Authorized Amount	Total Issued.	Accrued Interest.		Amount of Bonds Outstanding Dec. 31, 1881
			Interest	Principal	Rate	Payable		Dec. 31, 1881	To Dec. 31, 1881	During Year	
1st mortgage.	April 1, 1880.	April 1, 1900.	Gold.	Gold.	5	Oct. & April	$250,000 00	$250,000 00	$6,250 00	$12,500 00	$250,000 00

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1881.							
			Single.	Length of Roadway—Single and Double Track.		Reduced to Single Track.				
						Track.	Sidings.	Track and Sidings.		
Main Line and Branches.	From—	To—	Steel.	Steel.	Iron and Steel.	Steel.	Iron.	Iron.	Steel.	Iron and Steel.
Main line within State	Castroville	Monterey	15.12	15.12	15.12	15.12	1.43	1.43 (b)	15.12 (c)	16.55
Total on whole road, December 31, 1881			15.12	15.12	15.12	15.12	1.43	1.43	15.12	16.55

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1881—Within the State.		
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rails	2.86	44	125.83
Length of steel rails	15.12	39⅔	594.00

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STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Charles Crocker, President of the Monterey Railroad Company, and J. L. Willcutt, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

CHAS. CROCKER.
J. L. WILLCUTT.

Subscribed and sworn to before me, this fourth (4th) day of May, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

NORTHERN RAILWAY COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

W. V. Huntington, President	San Francisco.
C. P. Huntington, Vice-President	New York.
Leland Stanford, Treasurer	San Francisco.
Charles Crocker	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco — California.

The Northern Railway Company was incorporated July 19, 1871.

CAPITAL STOCK.

1. Capital stock authorized by charter		$8,400,000 00
2. Capital stock authorized by votes of company		8,400,000 00
3. Capital stock issued; amount paid in		4,710,500 00
5. Total amount paid in as per books of the company		4,710,500 00
8. Par value of shares issued		100 00
9. Total number of stockholders	19	
10. Number of stockholders in California	18	
11. Amount of stock held in California		4,643,000 00

DEBT.

12. Funded debt as follows:		
Bonds		$3,148,000 00
Interest paid on same during the year	$188,880 00	
13. Total amount of funded debt		$3,148,000 00
14. Unfunded debt:		
All other debts, current credit balances, etc		94,440 00
16. Total gross debt liabilities		$3,242,440 00
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:		
Cash on hand		126,757 95
Other securities and debt balances		
18. Total net debt liabilities		$3,115,682 05

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

11. Total cost of construction	$8,844,122 49

Equipment.

17. Other cars (hand cars)	2,589 70
18. Total for equipment	$2,589 70

PROPERTY PURCHASED.

27. Whole amount of permanent investments	$8,446,712 19
30. Cash and cash assets	126,757 95
31. Total property and assets of the company	$8,573,470 14

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry		
2. Bridging		
3. Superstructure, including rails	Sidings and new track	$22,224 65
Fences		274 46
5. Passenger and freight stations		3,971 43
Woodsheds and water stations		1,141 63
6. Engine houses, car sheds, and turn-tables		
7. Machine shops		1,091 03
8. Engineering, agencies, salaries, and other expenses during construction		430 99
Tools and section houses		448 08
Bridges and trestles		408 06
18. Total		$29,990 33
19. Property sold and credited to property account during the year:		
Lands for warehouses	$500 00	
Track taken up	1,073 08	
		1,573 08
20. Net addition to property account for the year		$28,417 25

REVENUE FOR THE YEAR.

Reported by lessees.		
13. Derived from rents for use of road and equipment when leased		$570,000 00
Less rent paid San Pablo and Tulare Railroad	$167,464 80	
General expenses	2,503 04	
Taxes	2,107 97	
		172,075 81
Net income		$397,924 19

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$397,924 19
2. Percentage of same to capital stock and net debt		.05
3. Percentage of same to total property and assets		.04 6/10
4. Interest accrued during the year:		
On funded debt	$188,880	
Total		188,880 00
5. Dividends declared (8 per cent) for first years. Amount	$376,840	
6. Date of last dividend declared, No. 1	February 16, 1881	
7. Balance for the year, or surplus		209,044 19
8. Surplus at commencement of the year	$788,324 95	
Deduct entries made in profit and loss account during the year not included in the foregoing statement dividend	$376,840	
9. Surplus at commencement of the year, as changed by aforesaid entries		411,485 95
10. Total surplus, December 31, 1881		620,530 14

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GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$8,444,122 49
Cost of equipment	2,589 70
Cash, cash assets, and other items	126,757 95
Total	$8,573,470 14

Credits.

Capital stock	$4,710,500 00
Funded debt	3,148,000 00
Other debts	94,440 00
Profit and loss (profit)	620,530 14
Total	$8,573,470 14

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Rental		$570,000 00
Leased road	$167,464 80	
Taxes	2,107 97	
General expenses	2,503 04	
Interest	188,880 19	
	$570,000 00	$570,000 00

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:
   - *San Pablo Division*—
     - From West Oakland to Shell Mound — Aug. 16, 1876.
     - From Shell Mound to Martinez — Jan. 9, 1878.
     - From Benicia to Suisun — Dec. 28, 1879.
   - *Northern Division*—
     - From Woodland to Williams — July 1, 1876.
     - From Williams to Willows — Oct. 3, 1878.
   - *San Pablo and Tulare Railroad (leased)*—
     - From Martinez to Tracy — Sept. 8, 1878.
3. Length of line with track laid, if road is not completed — 112.1628 miles.
4. Length of double track on main line — 4.6812 miles.
10. Total length of road belonging to this company — 116.8440 miles.
11. Aggregate length of siding and other tracks not enumerated above — 25.8835 miles.
12. Same in California — 25.8835 miles.
13. Aggregate length of track belonging to this company computed as single track — 142.7275 miles.
14. Same in California — 142.7275 miles.
15. Total length of steel rail in tracks belonging to this company, not including steel top rail; (weight per yard, fifty pounds) 182.4532 rail (track) — 91.2266 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California — 7
18. Number of wooden bridges (aggregate length, 10,177 feet) in California — 168
19. Number of crossings of highways at grade, in California — 79
20. Number of crossings of highways over railroad, in California — 2
22. Number of highway bridges eighteen feet above track, in California — 2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California — 79
27. Number of railroad crossings at grade — 3

    Tramway at Pinole (gauge three feet five inches).
    Tramway at Martinez.
    Local track Central Pacific Railroad at Oakland Point.

ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY.

Operated by Central Pacific Railroad Company.

80. *Names, Description, and Length of Each.*

Name of Company.	Termini. From—	Termini. To—
San Pablo and Tulare R. R.	Martinez	Tracy.

Length. (Miles.)	Dates of Lease. From—	Dates of Lease. To—	Amount of Rental.
46.5182	Sept. 2, 1878	Sept., 1888	$300 per mile per month.

37. Number of stations on all roads owned by this company — 36
40. Miles of telegraph owned by this company — 113
41. Number of telegraph offices in company stations — 16

TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Date.	Due.	In what money payable—Int'st and Principal.
First mortgage	Jan. 1, 1877	Jan. 1, 1907	Gold.

Interest. Rate.	Interest. Payable.	Authorized Amount.	Total Issued—December 31, 1881.	Accrued Interest. During Year.	Amt't of Bonds Outstanding December 31, 1881.
6	January and July.	$6,300,000 00	$3,148,000 00	$188,880 00	$3,148,000 00

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

Length of Track, December 31, 1881.

State separately, lengths within and without State. Reduce to single track by adding length of double track.

Main Line and Branches.	From—	To—	Single.		Double.	Length of Roadway—Single and Double Track.			Reduced to Single Track.						
									Track.			Sidings.	Track and Sidings.		
			Iron.	Steel.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Iron.	Steel.	(b) Iron and Steel.	(c) Iron and Steel.
Main line within State	Oakland	Junction S. P. & T. R. R., near Martinez		26.3419	4.6812		35.7043	35.7043		35.7043		13.9496	35.7043	13.9496	49.6539
Main line within State	Benicia	Suisun		16.3428			16.3428	16.3428		16.3428		4.7805	16.3428	4.3428	21.1233
Main line within State	Junction Cal. Pacific, near Woodland	Willows	25.6174	39.1795		25.6174	39.1795	64.7969	25.6174	39.1795		7.1534	39.1795	39.1795	71.9503
Total on whole road, December 31, 1881			25.6174	81.8642	4.6812	25.6174	91.2266	116.8440	25.6174	91.2266		25.8835	91.2266	51.5009	142.7275
Total constructed during year												3.4773		3.4773	3.4773
Total within the State constructed during year												3.4773		3.4773	3.4773

The length of rail is double the length of single track, columns (b) and (c) above.

Within the State—December 31, 1881.

	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rail	103.0018	44.0000	4,532.0792
Length of steel rail	182.4532	39.2857	7,167.8016
Total length of iron rail laid during the year in sidings	6.9546	44.0000	306.0024

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

W. V. Huntington, President of the Northern Railway Company, and James O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

W. V. HUNTINGTON.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this thirteenth (13) day of March, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

PITTSBURG RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS.

Levi Stevens, President—Fruit Vale, Alameda County, California.
Charles J. Deering, Vice-President—Fruit Vale, Alameda County, California.
Judah Baker—San Francisco, California.
Charles J. Morrill—Boston, Massachusetts.
Samuel Baker, Secretary—Oakland, California.

BUSINESS ADDRESS OF THE COMPANY:

No. 202 Sacramento Street—San Francisco, California.

The Pittsburg Railroad Company was incorporated January 23, 1862.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$50,000 00
2.	Capital stock authorized by votes of company	225,000 00
3.	Capital stock issued [number of shares, 2,250]; amount paid in	225,000 00
5.	Total amount paid in as per books of the company	225,000 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders—54	
10.	Number of stockholders in California—4	
11.	Amount of stock held in California—320 shares	
17.	Amount of cash, materials, and supplies on hand, sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:	
	Cash on hand	4,112 18
	Material and supplies on hand—No separate record.	

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1.	Grading and masonry (estimated)	$35,000 00
2.	Bridging (estimated)	27,000 00
3.	Superstructure, including rails (estimated)	51,000 00
4.	Land	400 00
	Land damages	465 26
	Fences (estimated)	550 00
5.	Passenger and freight stations—No separate record.	
6.	Engine houses, car sheds, and turn-tables } estimated	7,550 00
7.	Machine shops, including machinery and tools, }	
	Agencies, salaries, and other expenses during construction	57,047 00
	Offices and other buildings and wharves (estimated)	1,500 00
11.	Total cost of construction	$188,365 26

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Equipment.

	No.	Cost.
12. Locomotives	2	$24,000 00
16. Passenger cars	1	500 00
17. Freight cars (platform)	3	1,200 00
Other cars (hand, 2, $400—water, 1, $500)	3	900 00
Dump cars	32	19,200 00
Cars destroyed, and sundry materials	------	17,503 97
18. Total for equipment	------	$63,303 97

27. Whole amount of permanent investments	$251,669 23
28. Property in California	251,660 23
29. Amount of supplies and materials on hand	No record.
30. Cash and cash assets	4,112 00
31. Total property and assets of the company	$225,781 41

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$5 50
2. Derived from passengers from and to other roads, over roads operated by this company	678 75
7. Total earnings from passenger department	$684 25
8. Derived from local freight on roads operated by this company	$10,453 24
11. Derived from other sources belonging to freight department	2,601 92
12. Total earnings from freight department	$13,055 16
14. Total transportation earnings	$13,739 41
15. Earnings per mile of road operated	2,576 14
16. Earnings per train mile (total passenger and freight)	No record.

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

1. Taxes, State and local	$462 56
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	2,125 00
3. Legal expenses	100 00
5. Total	$2,687 56

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$3,661 50
5. Repairs of bridges	No separate record.
6. Repairs of buildings and fixtures (stations and turn-tables)	
7. Repairs of and additions to machine shop and machinery	
8. Repairs of fences, road crossings, and signs	
10. Repairs of locomotives	
14. Fuel for engines and cars; Number of tons of coal, 91¼; cost	365 00
15. Water and water stations	No separate record.
16. Fuel for stations and shops	
17. Oil and waste, etc.	70 75
18. Switchmen, watchmen, flag, and signalmen	720 00
19. Total	$4,807 25

Class IV—Freight traffic expenses.

1. Repairs of freight cars	No separate record.
Repairs of dump and work cars	
4. Salaries, wages, and incidentals of freight trains and stations	$11,798 84
8. Total	$11,798 84

9. Total expenses of operating the road embraced in Classes I, II, III, and IV	$19,293 65
10. Per train mile (total passenger and freight)	No record.
11. Percentage of expenses to total transportation earnings	1.40
13. Total expenses	$19,293 65

NET INCOME, DIVIDENDS, ETC.

6. Date of last dividend declared	November 6, 1876.
7. Balance for the year (deficit)	$5,554 24
8. Surplus at commencement of the year	9,666 42
9. Surplus at commencement of the year, as changed by aforesaid entries	9,666 42
10. Total surplus December 31, 1881	4,112 18

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from passenger department, as per "Revenue for the Year,"	$684 25
2. Per passenger train mile	No record.
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	Not segregated.
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	
5. Expenses, "Passenger Traffic," as per Class III, No. 8	
6. Total expenses	
7. Per passenger train mile	
8. Net earnings	
9. Per passenger train mile	

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year,"	$13,055 16
2. Per freight train mile	No record.
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	Not segregated.
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 21	
5. Expenses, "Freight Traffic," as per Class IV, No. 8	
6. Total expenses	19,293 65
7. Per freight train mile	Not segregated.
8. Net earnings	
9. Per freight train mile	

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$188,365 26
Cost of equipment	63,303 97
Supplies and materials on hand	No record.
Cash, cash assets, and other items	4,112 18
Total	$255,781 41

Credits.

Capital stock	$225,000 00
Profit and loss (profit)	30,781 41
Total	$255,781 41

DESCRIPTION OF ROAD.

Answers to interrogatories contained on pages twenty to twenty-nine, inclusive, and from thirty-two to forty-two, inclusive, are the same as those contained in report for 1880, which is referred to and made a part of this report.

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	No separate report.
2. Rate of speed of express passenger trains, including stops	12 miles.
3. Rate of speed of accommodation trains, including stops	12 miles.
4. Miles run by freight trains	No record.
8. Total train miles run	No record.
9. Total number of passengers carried	1,369
Number of through passengers going north	531

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Number of through passengers going south	838
Number of local passengers going east (or north)	All through.
Number of local passengers going west (or south)	All through.
10. Total passenger mileage, or passengers carried one mile	7,301¼
11. Passenger mileage to and from other roads	No record.
Average number of miles traveled by each local passenger	No record.
Average number of miles traveled by each through passenger	No record.
Average number of miles traveled by each passenger, through and local	No record.
12. Number of tons freight carried (not including gravel)	312,218
Number of tons freight from other States, carried	No record.
Number of tons freight in this State, carried	No record.
Number of tons freight produced in this State, carried	30,303
Number of tons of each class of freight, produced in this State, carried	No record.
13. Total freight mileage, or tons carried one mile	166,656
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	10 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	10 cents.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	10 cents.
18. Average rate of fare per mile received from passengers to and from other roads	10 cents.
20. Average rate of fare per mile for all passengers	10 cents.
21. Highest rate of freight per ton per mile for any distance	15 cents.
22. Lowest rate of freight per ton per mile for any distance	6 cents.
23. Average rate of local freight per ton per mile on roads operated by this company	8¼ cents.
25. Average rate of freight per ton per mile for all	8¼ cents.
Average rate of freight per ton per mile, products of this State	8¼ cents.
Average rate of freight per ton per mile, products of other States	8¼ cents.
26. Average number of cars in passenger trains (including baggage cars)	1
27. Average number of cars in freight trains—basis of eight-wheel	6

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Samuel Baker, Secretary of the Pittsburg Railroad Company, being duly sworn, deposes and says that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

SAMUEL BAKER, Secretary.

Subscribed and sworn to before me, this ninth day of May, 1882.

JAMES MASON,
Notary Public.

SAN FRANCISCO AND NORTH PACIFIC RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Col. Peter Donahue, President	San Francisco.
Col. J. M. Donahue, Vice-President	San Francisco.
Col. J. M. Donahue, Secretary	San Francisco.
T. J. Bergin, Treasurer	San Francisco.
Arthur Hughes	San Francisco.
Thomas Donahue	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

No. 246 Montgomery Street ..... San Francisco, California.

The San Francisco and North Pacific Railroad Company was incorporated June 29, 1877, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

Names of Railroad Companies.	Dates of Incorporation.
San Francisco North Pacific Railroad Company	June 22, 1872.
Sonoma and Marin Railroad Company	November 13, 1874.
Fulton and Guerneville Railroad Company	May 23, 1877.

CAPITAL STOCK.

1. Capital stock authorized by charter	$12,350,000 00
2. Capital stock authorized by votes of company	5,000,000 00
3. Capital stock issued, amount paid in	3,750,000 00
5. Total amount paid in as per books of the company	3,750,000 00
7. Amount per share still due thereon	25 00
8. Par value of shares issued	100 00
9. Total number of stockholders	5
10. Number of stockholders in California	5
11. Amount of stock held in California	3,750,000 00

DEBT.

14. Unfunded debt:	
All other debts, current credit balances, etc., unpaid bills, pay-roll, and stage line	$60,019 98
16. Total gross debt liabilities	$60,019 98
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:	
Cash on hand and in bank	$62,967 00
Materials and supplies on hand (coal, wood, and ties)	7,674 90
Other securities and debt balances	60,282 49
18. Total net debt liabilities	$130,924 39

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	Main line	$2,610,089 86	
2. Bridging	Sonoma and Marin	533,363 05	
3. Superstructure, including rails	Ukiah extension	2,846 75	
4. Land			$3,146,299 66
Land damages			
Fences			
5. Passenger and freight stations	Building account	$120,201 24	
6. Engine houses, car sheds, and turn-tables	Shop tools account	19,525 10	
7. Machine shops, including machinery and tools			139,726 34
9. Engineering:			
Reconstruction Donahue wharf			1,414 89
11. Total cost of construction			$3,287,440 89

Equipment.

12. Locomotives (eight)			$107,763 29
16. Passenger cars	Car account	$231,159 30	
Mail cars	Car construction account	19,730 15	
Baggage cars			
17. Freight cars			250,889 45
Other cars			
18. Total for equipment			$358,652 74

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PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

19. *Lands.*

Donahue	$8,000 35
Lakeville	3,000 00
Geyserville	750 00
Petaluma	5,000 00
Cloverdale	4,000 00
Santa Rosa	8,500 00
San Rafael, and Marin County	3,697 00
Fulton	700 00
Mark West	750 00
Windsor	750 00
Healdsburg	4,000 00
	$39,147 35

Steamboat Property.

	Price Paid.
Steamer James M. Donahue	$155,000 00
Steamer Antelope	90,000 00
Steamer M. S. Latham	16,000 00
Steamer Hattie Ficker	16,000 00
Launch Ruby	1,500 00
Total	$278,500 00

These figures represent the original cost, not deducting wear and tear.

25. *Other property purchased.*

Furniture	$6,255 28
Engines	6,500 00
Trucks and scales	3,214 93
	$15,970 21

26. Total for property purchased, etc.	$3,979,711 19
27. Whole amount of permanent investments	All.
28. Property in California	All.
29. Amount of supplies and materials on hand	7,674 90
30. Cash and cash assets	120,402 74
31. Total property and assets of the company	$4,107,788 83

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

3. Superstructure (reconstruction of wharf)	$1,414 89
5. Passenger and freight stations	1,564 16
Woodsheds and water stations	
9. Locomotives (one)	8,829 95
13. Passenger, mail, and baggage cars	10,742 49
14. Freight and other cars	
	$22,551 49
17. Any other expenditures charged to property account: Reconstruction Sonoma and Marin branch, between Petaluma and San Rafael	11,160 73
	$33,712 22
19. Property sold and credited to property account during the year: Iron, etc., sold from Sonoma and Marin Railroad	6,313 02
20. Net addition to property account for the year	$27,399 20

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$189,622 10
5. Derived from express and extra baggage	9,000 00
6. Derived from mails	7,236 82
7. Total earnings from passenger department	$205,858 92
8. Derived from local freight on roads operated by this company	204,800 81
14. Total transportation earnings	$410,659 73
15. Earnings per mile of road operated	4,439 66
16. Earnings per train mile (total passenger and freight)	$47 47
17. Income derived from rent of property, other than road and equipment: Transfer Company bar on steamer; Rents at Donahue	6,643 00
18. Income derived from all other sources (including accretions from sinking funds, investments in stock, bonds, steamboat property, transportation lines, etc:	
Sonoma Valley Railroad Company	27,215 83
Miscellaneous receipts	2,453 21
19. Total income derived from all sources	$446,972 37

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local (estimated, being in dispute)	$22,469 91
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
Expenses of Superintendent	5,762 50
Steamer expenses	47,372 58
Office expenses	7,946 80
Stationery and printing	2,461 80
Advertising	3,836 10
Repairs of steamers	11,749 74
Miscellaneous expenses	1,294 60
Repairs and expenses, wharf	1,301 13
Legal expenses	2,785 96
Interest and discount	42 43
5. Total	$107,023 55
6. Proportion belonging to passenger department; 7. Proportion belonging to freight department	We do not keep the accounts separate.

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$40,064 49
2. Iron rails laid, deducting old rails taken up. (Number of miles, 746, new iron; weight per yard, 56 lbs.) Number of feet, 11,134; weight per yard, 50 lbs, old iron for siding.	
3. Steel rails laid, deducting old rails taken up. (Number of feet, 8,518, weight per yard, 50 lbs), new steel.	
4. New ties. (Number 10,774); cost, about 40c. each.	
5. Repairs of bridges	4,634 86
6. Repairs of buildings and fixtures (stations and turn-tables)	3,266 08
8. Repairs of fences, road crossings and signs, and tools	403 16
10. Repairs of locomotives, including salaries, and running same	19,742 61
14. Fuel for engines and cars: Number of cords of wood, 4,123; cost	20,803 00
15. Water and water stations	2,965 17
16. Fuel for stations and shops: Charged in station and repair account.	
17. Oil and waste: Charged in sundry accounts.	
18. Switchmen, watchmen, flag and signalmen. See station expenses.	
19. Total	$91,879 37

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20. Proportion of same to passenger department	We do not keep the two accounts separate.
21. Proportion of same to freight department	

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, baggage, and freight cars	$13,980 49
4. Salaries, wages, and incidentals of passenger and freight trains	9,211 62
5. Salaries, wages, and incidentals of passenger and freight stations	17,139 82
8. Total	$40,331 93

Class IV—Freight traffic expenses.

3. Damages and gratuities, freight	$1,516 82
8. Total	$1,516 82
9. Total expenses of operating the road embraced in Classes I, II, III, and IV	$240,751 67
11. Percentage of expense to total transportation earnings 53 87/100	
13. Total expenses	$240,751 67

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$206,220 70
2. Percentage of same to capital stock and debt 5 44/100		
3. Percentage of same to total property and assets 4 52/100		
7. Balance for the year, or surplus		$206,220 70
8. Surplus at commencement of the year	$652,514 93	
Deduct entries made in profit and loss account during the year, not included in the foregoing statement	560,966 78	
9. Surplus at commencement of the year, as changed by aforesaid entries		91,548 15
10. Total surplus December 31, 1881		$297,768 85

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

No separate account kept of this department.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

No separate account kept of this department.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$3,147,714 55
Cost of equipment	831,996 64
Supplies and materials on hand	7,674 90
Cash, cash assets, and other items (bills received, loans, deposits bank, cash, stage lines, etc.)	120,402 74
Total	$4,107,788 83

Credits.

Capital stock	$3,750,000 00
Other debts (unpaid bills, payroll)	60,019 98
Profit and loss (profit)	297,768 85
Total	$4,107,788 83

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Freight receipts		$204,800 81
Passenger		189,622 10
Express		9,000 00
Rental		6,643 60
Miscellaneous		29,669 04
Mail		7,236 82
		$446,972 37
Superintendent's expenses	$5,762 50	
Station	17,139 82	
Train	9,211 62	
Steamer	47,372 58	
Locomotive	20,803 00	
Office	7,946 80	
Stationery and printing	2,461 80	
Advertising	3,836 10	
Water service	2,965 17	
Repairs of tools	403 16	
Repairs of track	40,064 49	
Repairs of building	3,266 08	
Repairs of and running expenses of engines	19,742 61	
Repairs of cars	13,980 49	
Repairs of steamers	11,749 74	
Repairs of bridges and culverts	4,634 86	
Miscellaneous expenses	1,294 60	
Loss and damage (property)	1,516 82	
Wharf expenses and repairs	1,301 13	
Taxes	22,469 91	
Legal expenses	2,785 96	
Interest and discount	42 43	
		$240,751 67
		$206,220 70

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Donahue to Santa Rosa, 23 miles	January 1, 1870.
From Santa Rosa to Windsor, 9 miles	March 1, 1871.
From Windsor to Grant's, 4 miles	April 10, 1871.
From Grant's to Healdsburg, 2 miles	July 1, 1871.
From Healdsburg to Cloverdale, 18 miles	April 15, 1872.
From Fulton to Guerneville, 16 miles	May 29, 1876.
From Petaluma to San Rafael, 21 miles	June 2, 1879.
2. Length of main line of road from Donahue to Cloverdale	56 miles.
5. Branches owned by the company	36½ miles.
Names and description of; single or double track:	
Fulton to Guerneville	16 miles.
San Rafael to Petaluma	20½ miles.
6. Total length of branches owned by the company	36½ miles.
7. Total length of branches owned by the company in California	36½ miles.
10. Total length of road belonging to this company	92½ miles.
11. Aggregate length of siding and other tracks not enumerated above	9 miles.
12. Same in California	9 miles.
13. Aggregate length of track belonging to this company computed as single track	101½ miles.
14. Same in California	101½ miles.
15. Total length of steel rail in tracks belonging to this company, not including steel top rail (weight, 50 pounds)	3½ miles.
16. Number of spans of bridges, of 25 feet and upwards, in California	15
18. Number of wooden bridges (aggregate length, 18,811 feet), in California	300
19. Number of crossings of highways at grade, in California	114
20. Number of crossings of highways over railroad, in California	2
22. Number of highway bridges 18 feet above track, in California	2

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26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	116
27. Number of railroad crossings at grade	168
34. Total miles of road operated by this company	92½ miles.
35. Total miles of road operated by this company in California	92½ miles.
36. Number of stations on all roads operated by this company	32
37. Number of stations on all roads owned by this company	32
38. Same in California	32
39. Miles of telegraph on line of road operated by this company	76
41. Number of telegraph offices in company stations	8
42. Number of telegraph stations operated by this company	8

ROLLING STOCK.

	No.	Average Weight.
1. Locomotives	8	
Average weight of engines in working order		58,500
Maximum weight of engines in working order [64,900 lbs.]		
2. Tenders	8	
Average weight of tenders full of fuel and water		40,000
Maximum weight of tenders full of fuel and water [40,000 lbs.]		
Average joint weight of engines and tenders		98,500.66
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [42¼ feet]		
4. Total length of heaviest engine and tender over all [53 feet]		
6. Passenger cars	9	
Average weight		38,000
Maximum weight [39,500 lbs.]		
7. Mail and baggage cars	3	
8. Eight-wheel box freight cars	40	
9. Four-wheel box freight cars	1	
10. Eight-wheel platform cars	142	
11. Four-wheel platform cars	1	
12. Other cars (1 special and 3 way cars, 2 track-laying cars, 16 hand, 15 push, and 2 pile-driver cars	39	

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	182
15. Number of locomotives equipped with train brakes—kind of brake: Westinghouse	5
16. Number of cars equipped with train brakes—kind of brake: Westinghouse	12
17. Number of passenger cars with Miller platform and buffer	9

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	295,202 miles.
2. Rate of speed of express passenger trains, including stops, per hour	25 miles.
3. Rate of speed of accommodation trains, including stops	20 miles.
4. Miles run by freight trains	569,822 miles.
5. Rate of speed of express freight trains, including stops	15 miles.
6. Rate of speed of accommodation freight trains, including stops	11⅛ miles.
7. Miles run by other trains, and for what purpose:	
Special excursion and picnic trains	1,400 miles.
Special freight, not in conductor's report	2,080 miles.
8. Total train miles run	868,504 miles.
9. Total number of passengers carried	120,452
Number of local passengers going north	60,541
Number of local passengers going south	59,911
10. Total passenger mileage, or passengers carried one mile	5,246,551 miles.
Average number of miles traveled by each local passenger	$43\frac{56}{100}$ miles.
12. Number of tons freight carried (not including gravel)	70,049
13. Total freight mileage, or tons carried one mile	3,348,681 miles.
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	$2\frac{21}{100}$ cents.
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	$3\frac{61}{100}$ cents.
20. Average rate of fare per mile for all passengers	15 cents.

23. Average rate of local freight per ton per mile on roads operated by this company	$6\frac{11}{100}$ cents.
25. Average rate of freight per ton per mile for all	$6\frac{11}{100}$ cents.
26. Average number of cars in passenger trains (including baggage cars)	4
27. Average number of cars in freight trains—basis of eight-wheel	22
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	206,500 lbs.
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	550,500 lbs.
30. Number of persons regularly employed by company, including officers	195
Average monthly pay of employés, other than officers	$58 31
Average monthly pay of engine drivers	94 58
Average monthly pay of passenger conductors	100 00
Average monthly pay of freight conductors	87 50
Average monthly pay of baggage masters	65 00
Average monthly pay of brakemen, flagmen, and switchmen	60 00
Average monthly pay of section men as foremen	60 00
Average monthly pay of mechanics in shops	90 00
Average monthly pay of laborers and section men	47 25

Relating to Passengers.

2. Passengers to San Francisco	43,109
3. Passengers from San Francisco	44,573

LIST OF ACCIDENTS IN CALIFORNIA.

	From their own misconduct or carelessness—in California.		Total—in California.		Total on Whole Road Operated.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers		1		1		1
Others	1		1		1	

STATEMENT OF EACH ACCIDENT IN CALIFORNIA.

March 29, 1881.—Mr. Isaac Bernhart, who was a passenger from Petaluma to Santa Rosa on a freight train, when going into Santa Rosa he walked out of the way car on to a flat, and before the train stopped, jumped from the flat to the platform, and broke his knee.

November 23, 1881.—Mr. Lewis Grove was walking on the track from Fulton to Santa Rosa and met a freight train going to Fulton, he being entirely deaf and not seeing the train in time to step from the track, was instantly killed.

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.	Length of Track December 31, 1881.												
	Single.			Length of Roadway—Single and Double Track.			Reduced to Single Track.						
							Track.			Sidings.	Track and Sidings.		
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Iron.	Steel.	Iron and Steel.
Main line within State	Donahue	Cloverdale	52½	3½	89	3½	92½	89	3½	9	(b) 98	(c) 3½	101½
	San Rafael	Junction	20½										
	Fulton	Guerneville	16										
Total on whole road, December 31, 1881			89	3½									

The length of rail is double the length of single track, columns (b) and (c) above.	December 31, 1881—Within the State.			December 31, 1881—Within the State.		
	Length, in Miles.	Average Weight per Mile.	Total Weight, (Tons).	Length, in Miles.	Average Weight per Mile.	Total Weight, (Tons).
Length of iron rails	196	40½	7,968	101½	81	8,221½
Length of steel rails	7	40½	283½			

Total length of iron rail laid during the year ..... 746 feet new, 11,134 feet old.
Total length of steel rail laid during the year ..... 8,518 feet.
Total length of iron rail replaced by steel rail during the year ..... 8,518 feet.

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Peter Donahue, President of the San Francisco and North Pacific Railroad Company, and Jas. M. Donahue, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

P. DONAHUE.
JAS. M. DONAHUE.

Subscribed and sworn to before me, this fourth day of April, 1882.

WM. S. CAMPBELL,
Notary Public.

SAN PABLO AND TULARE RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
Charles Crocker, Vice-President	San Francisco.
George Crocker, Treasurer	San Francisco.
W. V. Huntington	San Francisco.
E. H. Miller, Jr.	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The San Pablo and Tulare Railroad Company was incorporated July 19, 1871.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$3,750,000 00
2.	Capital stock authorized by votes of company	3,750,000 00
3.	Capital stock issued [number of shares, 18,610]; amount paid in	1,861,000 00
5.	Total amount paid in as per books of the company	1,861,000 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders	17
10.	Number of stockholders in California	16
11.	Amount of stock held in California	1,813,300 00

DEBT.

12.	Funded debt as follows:		
	Bonds		$1,023,000 00
	Interest paid on same during year	$61,380 00	
13.	Total amount of funded debt		$1,023,000 00
16.	Total gross debt liabilities		$1,023,000 00
17.	Amount of cash, materials, and supplies on hand, sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:		
	Sinking funds		100,861 53
18.	Total net debt liabilities		$922,138 47

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COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	
2. Bridging	
3. Superstructure, including rails	
4. Land	
Land damages	
Fences	
5. Passenger and freight stations	$2,905,622 19
6. Engine houses, car sheds, and turn-tables	
7. Machine shops, including machinery and tools	
8. Interest	
9. Engineering	
Agencies, salaries, and other expenses during construction	

PROPERTY PURCHASED, ETC.

27. Whole amount of permanent investments	$2,905,622 19
30. Cash and cash assets	100,861 53
31. Total property and assets of the company	3,006,483 72

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

2. Bridging	$199 80
3. Superstructure, including rails	6,148 67
4. Fences	3 56
5. Passenger and freight stations	4,193 40
18. Total	$10,545 43
19. Property sold and credited to property account during the year:	
House and turn-table sold	316 23
20. Net addition to property account for the year	$10,229 20

REVENUE FOR THE YEAR.

Traffic earnings and operating expenses included in the report of Central Pacific Railroad Company.

13. Derived from rents for use of road and equipment when leased		$167,464 80
Less taxes	$415 88	
Less general expenses	1,988 64	
		2,404,52
Net earnings		$165,060 28

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$165,060 28
2. Percentage of same to capital stock and net debt	.05 9/16	
3. Percentage of same to total property and assets	.05 4/10	
4. Interest accrued during the year:		
On funded debt	$61,380 00	
Total		$61,380 00
5. Dividends declared:		
Eleven per cent for the first three years.		
6. Date of last dividend declared (No. 1)		Feb. 16, 1881.
7. Balance for the year, or surplus		$103,680 28
8. Surplus at commencement of the year		$223,513 44
Deduct entries made in profit and loss account during the year, not included in the foregoing statement (dividend)		204,710 00
9. Surplus at commencement of the year, as changed by aforesaid entries		$18,803 44
10. Total surplus, December 31, 1881		$122,483 72

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

Included in the report of Central Pacific Railroad Company.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

Included in the report of Central Pacific Railroad Company.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$2,905,622 19
Cash, cash assets, and other items	100,861 53
Total	$3,006,483 72

Credits.

Capital stock	$1,861,000 00
Funded debt	1,023,000 00
Profit and loss (profit)	122,483 72
Total	$3,006,483 72

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Rental		$167,464 80
Taxes	$415 88	
General expenses	1,988 64	
Interest	61,380 00	
Profit	10,680 28	
	$16,464 80	$16,464 80

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Tracy to Martinez	Sept. 3, 1878.
3. Length of line with track laid, if road is not completed	46.5180 miles.
10. Total length of road belonging to this company	46.5180 miles.
11. Aggregate length of siding and other tracks not enumerated above	9.9223 miles.
12. Same in California	9.9223 miles.
13. Aggregate length of track belonging to this company computed as single track	56.4403 miles.
14. Same in California	56.4403 miles.
15. Total length of steel rail in tracks belonging to this company, not including steel top rail; (weight per yard, 50 pounds; 93.0360 rail)	46.5180 miles.
16. Number of spans of bridges, of 25 feet and upwards, in California	2
18. Number of wooden bridges (aggregate length, 5,630 feet) in California	79
19. Number of crossings of highways at grade, in California	33
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	33
27. Number of railroad crossings at grade:	
Central Pacific Railroad at Tracy	1
29. Number of railroad crossings under other railroads, specifying each	3
Pittsburg Railroad, 18½ feet in clear.	
Black Diamond Railroad, 19 feet in clear.	
Empire Railroad, 19 feet in clear.	
37. Number of stations on all roads owned by this company	9
40. Miles of telegraph owned by this company	46½ miles.
41. Number of telegraph offices in company stations	8

MILEAGE, TRAFFIC, ETC.

Included in report of Central Pacific Railroad.

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12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of	Date	Due	In what Money Payable.		Interest.		Authorized Amount.
			Interest.	Principal.	Rate.	Payable.	
1st mortgage.	April 1, 1878.	April 1, 1908.	Gold.	Gold.	6	Oct. & April.	$3,750,000 00

TABLE A—Continued.

Total issued to December 31, 1881.	Accrued interest during year.	Amount of Bonds outstanding December 31, 1881.
$1,023,000 00	$61,380 00	$1,023,000 00

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

Length of Track December 31, 1881.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.

Main Line and Branches	From—	To—	Length of Roadway—Single and Double Track.		Reduced to Single Track.						
			Single.		Track.	Sidings.		Track and Sidings.			
			Steel.	Iron and Steel.	Steel.	Iron.	Iron.	Steel.	Iron and Steel.
Main line without State	State line		46.5180	46.5180	46.5180	9.9223	(b) 9.9223	(c) 46.5180	56.4403
Main line within State	Tracy	Near Martinez	46.5180						
Total on whole road, December 31, 1881			46.5180	46.5180	46.5180	9.9223	9.9223	46.5180	56.4403
Total constructed during year						.0975	.0975		.0975
Total within the State constructed during year						.0975	.0975		.0975

The length of rail is double the length of single track, columns (b) and (c) above.

December 31, 1881—Within the State.

	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rails	19.8446	44	873.1624
Length of steel rails	93.0360	39.2857	3,654.9844
Total length of old iron rail laid during the year in construction	.1950	44	8.5800

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STATE OF CALIFORNIA, City and County of San Francisco. } ss.

Leland Stanford, President of the San Pablo and Tulare Railroad Company, and J. O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are in all respects just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

LELAND STANFORD.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth (15th) day of March, 1882.

CHAS. J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

SOUTHERN PACIFIC RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

Charles Crocker, President	San Francisco.
Charles F. Crocker, Vice-President	San Francisco.
N. T. Smith, Treasurer	San Francisco.
J. L. Willcutt, Secretary	Oakland.
George E. Grey, Chief Engineer	San Francisco.
A. C. Bassett, Superintendent	San Francisco.
Jerome Madden, Land Agent	San Francisco.

NAMES OF DIRECTORS:

Charles Crocker	San Francisco.
Charles F. Crocker	San Francisco.
H. M. Newhall	San Francisco.
Charles Mayne	San Francisco.
N. T. Smith	San Francisco.
W. V. Huntington	San Francisco.
J. L. Willcutt	Oakland.

BUSINESS ADDRESS OF THE COMPANY:

Southern Pacific Railroad Company ..... San Francisco, California.

The Southern Pacific Railroad Company was incorporated December 18, 1874, and formed by consolidation of the companies whose names and dates of incorporation are shown in the previous report.

CAPITAL STOCK.

1. Capital stock authorized by charter		$90,000,000 00
3. Capital stock issued [number of shares, 364,770]; amount paid in		36,477,000 00
4. Capital stock paid in on shares not issued [number of shares, 16,450]		286,900 00
5. Total amount paid in, as per books of the company		36,763,900 00
7. Amount per share still due thereon	$80 per share on 12,240 shares $90 per share on 4,210 shares	82 55
8. Par value of shares issued		100 00
9. Total number of stockholders	36	
10. Number of stockholders in California	29	
11. Amount of stock held in California		30,945,950 00

DEBT.

12. Funded debt as follows:		
Bonds		$28,483,000 00
Interest paid on same during year	$1,723,650 00	
13. Total amount of funded debt		$28,483,000 00

14. Unfunded debt:		
Incurred for construction, equipment, or purchase of property		$139,394 48
All other debts, current credit balances, etc.		1,176,972 97
15. Total amount of unfunded debt		$1,926,367 45
16. Total gross debt liabilities		$30,409,367 45
17. Amount of cash, materials, and supplies on hand, sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:		
Cash on hand		$417,210 54
Material and supplies on hand		88,201 98
Other securities and debt balances		2,223,734 19
18. Total net debt liabilities		$2,729,146 71

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry 2. Bridging 3. Superstructure, including rails 4. Land Land damages Fences		$62,222,304 93
5. Passenger and freight stations and water stations		638,247 53
6. Engine houses and car sheds		99,971 16
7. Machine shops, including machinery and tools		138,556 11
9. Engineering Agencies, salaries, and other expenses during construction		Included in contract for construction of road.
11. Total cost of construction		$63,099,079 73

Equipment.

	No.	Cost.
12. Locomotives	48	$589,899 68
14. Parlor cars	2	15,232 42
16. Passenger cars	74	308,626 10
Mail cars	3	10,689 55
Baggage cars	10	31,009 25
17. Freight cars	952	864,594 53
Other cars	207	28,452 11
18. Total for equipment	------	$1,848,503 64

PROPERTY PURCHASED, ETC.

27. Whole amount of permanent investments	$64,947,583 37
28. Property in California	$64,947,583 37
29. Amount of supplies and materials on hand	88,201 98
30. Cash and cash assets	2,640,944 73
31. Total property and assets of the company	$67,676,730 08

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32. SINKING AND CONTINGENT FUNDS.

Showing amount of same, and their purpose.

Applicable to Redemption of what Bonds.		Terms and Conditions of Funds.	Total to December 31, 1881.			Received During Year.	Applied During Year.	On Hand Dec. 31, 1881.
Character.	Series.		Invested.	Applied.	On hand.			
First mortgage	A	Proceeds of sales of government lands. Sinking fund, one hundred thousand dollars, yearly, to commence 1882.	$1,303,506 16	$997,134 90	$306,411 26	$475,940 13	$399,729 90	$306,411 26
First mortgage	B							
First mortgage	C							
First mortgage	D							

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry		
2. Bridging		
3. Superstructure, including rails		$72,740 33
4. Land		
Land damages		
Fences		
5. Passenger and freight stations		19,039 06
Woodsheds and water stations		
6. Engine houses and car-sheds		581 01
7. Machine shops, machinery, and tools		1,122 25
8. Engineering, agencies, salaries, and other expenses during construction: Included in contract for construction of road.		
9. Locomotives		350 00
14. Freight and other cars (one)		750 47
18. Total		$54,260 50
19. Property sold and credited to property account during the year: Buildings		560 00
20. Net addition to property account for the year		$53,700 50

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company		$463,124 07
2. Derived from passengers from and to other roads, over roads operated by this company		11,541 65
5. Derived from express and extra baggage	$777 34	13,599 62
6. Derived from mails		12,400 56
7. Total earnings from passenger department		$500,665 90
8. Derived from local freight on roads operated by this company		$628,858 30
12. Total earnings from freight department		$628,858 30
13. Derived from rents for use of road and equipment when leased (earned but not received)		$1,650,600 00
14. Total transportation earnings		$1,129,524 20
15. Earnings per mile of road operated (Monterey Branch, $15 04; North Division, $160 89), 176.29 miles		$6,407 19
16. Earnings per train mile (total passenger and freight), 466.016 miles		2 42
17. Income derived from rent of property, other than road and equipment, specifying same		11,791 31
18. Income derived from all other sources (including accretions from sinking funds, investments in stock, bonds, steamboat property, transportation lines, etc):		
Storage		6,101 87
Miscellaneous		7,597 40
Telegraph		3,000 00
19. Total income derived from all sources		$2,808,614 78

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EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local (northern division)		$76,693 81
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV		34,402 94
General accounts, embracing salaries of general officers, general office expenses, legal expenses, etc :		
Expense of Superintendent		5,353 33
Station service		29,931 72
Train		73,086 31
Office expenses		36,422 50
Stationery and printing		8,596 90
Advertising		7,212 85
Repairs of tools		3,684 60
Miscellaneous expenses		1,071 30
Locomotive service		56,436 87
5. Total		$332,893 13
6. Proportion belonging to passenger department, 44.3 per cent		$147,471 66
7. Proportion belonging to freight department, 55.7 per cent		185,421 47

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)		$98,554 71
3. Steel rails laid, deducting old rails taken up		93,449 64
Number of miles, $10\frac{55}{220}$; weight per yard, 50 pounds.		
5. Repairs of bridges		15,717 17
6. Repairs of buildings and fixtures (stations and turn-tables)		5,842 41
8. Repairs of fences, road crossings, and signs		5,362 04
10. Repairs of locomotives		21,012 73
14. Fuel for engine and cars:		
Number of cords of wood, $877\frac{1}{4}$; cost		4,652 60
Number of tons of coal, 10,725; cost		79,467 19
15. Water and water stations		9,484 32
17. Oil and waste (37,464 pints oil, 7,813 pounds waste)		4,277 60
19. Total		$337,820 41
20. Proportion of same to passenger department, 44.3 per cent		$149,654 44
21. Proportion of same to freight department, 55.7 per cent		188,165 97

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars		$18,374 33
3. Damages and gratuities, passengers		981 51
4. Salaries, wages, and incidentals of passenger trains (mail service)		519 05
5. Salaries, wages, and incidentals of passenger stations		11,891 58
8. Total		$31,766 47

Class IV—Freight traffic expenses.

1. Repairs of freight cars		$30,243 02
3. Damages and gratuities, freight		1,707 90
5. Salaries, wages, and incidentals of freight stations		36,840 72
8. Total		$68,791 64
9. Total expenses of operating the road embraced in Classes I, II, III, and IV.		$791,671 65
10. Per train mile (total passenger and freight) [466,016 miles]		$1 65
11. Percentage of expenses to total transportation earnings		$70\frac{3}{100}$
12. Amount paid other companies as rent for use of road, specifying each company, the amount and basis on which rent is computed:		
Monterey Railroad, $15\frac{4}{10}$ miles, $20,400 per yr. {4.43 pr ct passenger / 5.07 per ct freight}		20,400 00
Taxes, State and local, Southern Division, leased land		163,899 60
General account, Southern Division, embracing salaries of general officers, general office expenses, etc. (Southern Division, leased road)		45,499 17
13. Total expenses		$1,001,070 42

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$503,462 36
4. Interest accrued during the year:		
On funded debt	$1,723,650 00	
On other debt	4,330 61	
Total		1,719,319 39
7. Balance for the year, or surplus		711,224 97
8. Deficit at commencement of the year	$207,762 34	
Deduct entries made in profit and loss account during the year, not included in the foregoing statement	$623,000 00	
9. Surplus at commencement of the year, as changed by aforesaid entries		415,237 66
10. Total surplus, December 31, 1881		563,462 63

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from passenger department, as per "Revenue for the Year," No. 7	$500,665 90
2. Per passenger train mile (includes half mixed), 312.715 miles	1 60
3. Expenses, proportion of "General Traffic Expenses"	147,471 66
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses"	149,654 44
5. Expenses, "Passenger Traffic"	31,766 47
44.3 per cent of amount paid leased road	9,037 20
6. Total expenses	337,926 77
7. Per passenger train mile	1 08
8. Net earnings	162,736 13
9. Per passenger train mile	52

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year"	$628,858 30
2. Per freight train mile (153.301 miles) includes half mixed	4 10
3. Expenses, proportion of "General Traffic Expenses"	185,421 47
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses"	188,165 97
5. Expenses, "Freight Traffic"	68,791 64
55.7 per cent of amount paid leased road	17,362 80
6. Total expenses	453,741 88
7. Per freight train mile	2 96
8. Net earnings	175,116 42
9. Per freight train mile	1 14

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$63,099,079 72
Cost of equipment	$1,848,503 64
Supplies and materials on hand	88,201 98
Cash	417,210 54
Current accounts	2,184,264 07
Other accounts	39,470 12
Total	$67,676,730 08

Credits.

Capital stock	$36,763,900 00
Funded debt	28,483,000 00
Other debts:	
Western Development Company	130,094 48
Trustees of mortgage	306,411 26
Due for interest coupons not presented	9,300 00
Current accounts	1,480,561 71
Profit and loss (profit)	503,462 63
Total	$67,676,730 08

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PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
To balance	$207,762 34	
To operating expenses	587,125 26	
To removal of track	67,768 39	
To general expense	64,545 66	
To legal expense	14,965 46	
To taxes	239,499 35	
To street assessments	1,094 06	
To interest on bonds	1,723,650 00	
To premium and discount on bonds and stock	10,729 90	
To loss on sales and removal of buildings	503,462 63	
By road earnings		$2,808,614 78
By road earnings account contract with Wells, Fargo & Co.		234,000 00
By trustees first mortgage bonds		399,729 90
By interest		4,330 61
	$34,466,675 29	$34,466,675 29
By balance brought down		$503,462 63

DESCRIPTION OF ROAD.

(See previous report.)

2. Length of main line of road from San Francisco to Colorado River	714.56
Length of main line in California	714.56
10. Total length of road belonging to this company	714.56
11. Aggregate length of siding and other tracks not enumerated above	67.69
12. Same in California	67.69
13. Aggregate length of track belonging to this company computed as single track	782.25
14. Same in California	782.25
15. Total length of steel rail in tracks belonging to this company, not including steel top rail	832.08
16. Number of spans of bridges of twenty-five feet and upwards, in California	46
18. Number of wooden bridges (aggregate length, 2,990 feet), in California	21

Bridges built within the year in California.

Location.	Kind.	Material.	Length.	When Built.
San Francisco	Trussed girder	Wood	27 feet	December.
San Francisco	Trussed girder	Wood	27 feet	December.

19. Number of crossings of highways at grade, in California	390
20. Number of crossings of highways over railroad, in California	2
21. Number of crossings of highways under railroad, in California	3
22. Number of highway bridges less than eighteen feet above track, in California	2
24. Number of highway crossings at which gates or flagmen are maintained, in California	2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	388
27. Number of railroad crossings at grade:	
At Santa Clara, across South Pacific Coast Railroad	1

ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY UNDER LEASE OR CONTRACT.

30. *Names, Description, and Length of Each.*

Name of Company.	Termini. From—	Termini. To—	Length (Miles).
Monterey Railroad Company	Castroville	Monterey	15¼

Date of Lease. From—	Date of Lease. To—	Amount of Rental.
January 1, 1880	60 days' notice	$1,700 per month.

31. Total length of above roads	15.4
34. Total miles of road operated by this company	176.29
35. Total miles of road operated by this company in California	176.29
36. Number of stations on all roads operated by this company	62
37. Number of stations on all roads owned by this company	122
38. Same in California	121
39. Miles of telegraph on line of road operated by this company	176.29
40. Miles of telegraph owned by this company	711.51
41. Number of telegraph offices in company stations	44
42. Number of telegraph stations operated by this company	25
43. Number of telegraph stations operated jointly by railroad and telegraph companies	44

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	48		In the absence of any demand for rolling stock there is no basis upon which the market value can be determined.
Average weight of engines in working order		31.5 tons.	
Maximum weight of engines in working order [38.2 tons]	48		
2. Tenders		22.7 tons.	
Average weight of tenders full of fuel and water			
Maximum weight of tenders full of fuel and water [27.7 tons]		54.6 tons.	
Average joint weight of engines and tenders			
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [45 feet]			
4. Total length of heaviest engine and tender over all [53.2 feet]			
6. Passenger cars	76		
Average weight		18.2 tons.	
Maximum weight [27.9 tons]			
7. Mail and baggage cars	13	15.4 tons.	
8. Eight-wheel box freight cars	581	9.8 tons.	
10. Eight-wheel platform cars	371	8 tons.	
12. Other cars	207	2.2 tons.	

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	952
15. Number of locomotives equipped with train brakes—kind of brake:	
Westinghouse air	24
16. Number of cars equipped with train brakes—kind of brake:	
Westinghouse air	75
17. Number of passenger cars with Miller platform and buffer	71

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MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	285,535
2. Rate of speed of express passenger trains, including stops	33 miles per hour.
3. Rate of speed of accommodation trains, including stops	27 miles per hour.
4. Miles run by freight trains	126,122
5. Rate of speed of express freight trains, including stops	12½ miles per hour.
6. Rate of speed of accommodation freight trains, including stops	8 miles per hour.
7. Miles run by other trains, and for what purpose:	
Mixed trains, freight and passenger	54,359
Gravel trains	5,410
Pay train	3,972
8. Total train miles run	475,398
9. Total number of passengers carried	480,133
Number of local passengers going east (or north)	239,162
Number of local passengers going west (or south)	240,971
10. Total passenger mileage or passengers carried one mile	16,931,395
11. Passenger mileage to and from other roads	1,057,428
Average number of miles traveled by each local passenger	$35\frac{26}{100}$ miles.
12. Number of tons freight carried, not including gravel	263,544
Number of tons of each class of freight, produced in this State, carried, as follows:	
Brick	3,574
Charcoal	32
Coal	9,524
Fence posts	430
Flour	4,498
Fruit	3,969
Grain	90,894
Hay	27,530
Lime	2,245
Lumber	13,073
Milk	2,773
Pickets	840
Quicksilver	709
Shingles	1,374
Stock	29,010
Tan bark	310
Vegetables	7,078
Wood	5,450
Wool	1,563
Merchandise	58,668
13. Total freight mileage, or tons carried one mile	18,611,167
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cts. maximum.
16. Lowest rate of fare per mile for any distance (single fare)	$2\frac{72}{100}$ cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	$2\frac{84}{100}$ cents.
18. Average rate of fare per mile received from passengers to and from other roads	$2\frac{57}{100}$ cents.
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	$\frac{67}{100}$ cents.
20. Average rate of fare per mile for all passengers	$2\frac{74}{100}$ cents.
21. Highest rate of freight per ton per mile for any distance	15 cents per ton.
22. Lowest rate of freight per ton per mile for any distance	2 cents per ton.
23. Average rate of local freight per ton per mile on roads operated by this company	$3\frac{45}{100}$ cts. per ton.
26. Average number of cars in passenger trains (including baggage cars)	$4\frac{91}{100}$
27. Average number of cars in freight trains—basis of eight wheel	$21\frac{12}{100}$
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	266,328 pounds.
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	512,369 pounds.
30. Number of persons regularly employed by company, including officers	535
Average monthly pay of employés, other than officers	$119 00
Average daily pay of engine drivers	$3 50 to $4 25
Average monthly pay of passenger conductors	$85, $100, $110
Average monthly pay of freight conductors	$85, $100, $110
Average monthly pay of baggage masters	75 00
Average monthly pay of brakemen, flagmen, and switchmen	65 00
Average daily pay of section men	$1 75
Average hourly pay of mechanics in shops	20 cts. to 45 cts.
Average daily pay of laborers	$2 00

Relating to Passengers.

1. Total season ticket passengers (round trip)	67,560
2. Passengers to San Francisco (including season)	187,249
3. Passengers from San Francisco (including season)	189,055

LIST OF ACCIDENTS IN CALIFORNIA.

	From their own misconduct or carelessness—In California.	
	Killed.	Injured.
Passengers	3	2
Employés	3	
Others		1
Total	6	3

STATEMENT OF EACH ACCIDENT IN CALIFORNIA.

March 11—Tramp fell from brake-beam, where he was stealing a ride, and was run over and killed.

April 25—Boy had leg run over; fell from train on which he was stealing a ride. Injured.

June 1—Man attempted to board a moving train; fell, and had his arm broken. Injured.

June 2—Boy fell from platform of passenger coach, and was run over and killed.

July 7—Brakeman fell from freight car, through his having broken the brake wheel with a club. Was killed.

July 6—Brakeman fell from top of car, and was so injured that he died from effect of same.

September 6—Small boy killed while playing in railroad yard at station.

October 13—Section man run over and killed. Supposed not to have heard alarm sounded.

November 4—A lady, in trying to board a moving train, was thrown to the ground and had her foot mashed.

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12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Series	Date.	Due.	In what Money Payable. Principal and Interest.	Interest.		Authorized Amount.	Total Issued December 31, 1881.	Accrued Interest.		Amount of Bonds Outstanding December 31, 1881.
					Rate.	Payable.			During Year.	Overdue.	
First mortgage	A	April 1, 1875	April 1, 1905	Gold	6	Oct. 1 & Apr. 1	$15,000,000	$15,000,000	$862,230	$9,300	$14,245,000
First mortgage	B	Oct. 1, 1875	Oct. 1, 1905	Gold	6	Apr. 1 & Oct. 1	5,000,000	5,000,000	299,400		49,800,000
First mortgage	C	Oct. 1, 1876	Oct. 1, 1906	Gold	6	Apr. 1 & Oct. 1	5,000,000	5,000,000	293,165		4,866,000
First mortgage	D	Oct. 1, 1876	Oct. 1, 1906	Gold	6	Apr. 1 & Oct. 1	5,000,000	4,520,000	268,860		4,392,000

TABLE A—CONTINUED.

Character of—	Series	Bonds Redeemed During Year Ending December 31, 1881.		
		Amount.	Cost.	Premium.
First mortgage	A	$231,000 00	$235,050 20	$4,050 20
First mortgage	B	10,000 00	10,106 60	106 60
First mortgage	C	20,000 00	20,213 20	213 20
First mortgage	D	128,000 00	134,359 90	6,359 90

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

Main Line and Branches.	From—	To—	Length of Track, December 31, 1881.												
			Single.		Length of Roadway—Single and Double Track.			Reduced to Single Track.							
								Track.		Sidings.		Track and Sidings.			
			Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron.	Steel.	(b) Iron.	(c) Steel.	Iron and Steel.
Main line within State:															
Northern Division	San Fr'ncisco	Tres Pinos & Soledad	100.90	59.99	100.90	59.99	160.89	100.90	59.99	27.67	------	128.57	59.99	188.56
Goshen Division	Huron	Goshen	------	40.00	------	40.00	40.00	------	40.00	.38	1.61	.38	41.61	41.99
Tulare Division	Goshen	Mojave	88.10	53.56	88.10	53.56	141.66	88.10	53.56	8.58	4.42	96.68	57.98	154.66
Los Angeles Division	Mojave	Los Angeles	20.13	78.99	20.13	78.99	99.12	20.13	78.99	3.02	3.35	23.15	82.34	105.49
Yuma Division	Los Angeles	Colorado River	84.39	163.39	84.39	163.39	247.78	84.39	163.39	7.42	5.13	91.81	168.52	260.33
Wilmington Division	Los Angeles	Wilmington	20.31	4.80	20.31	4.80	25.11	20.31	4.80	5.31	.80	25.62	5.60	31.22
Total on whole road, December 31, 1881			313.83	400.73	313.83	400.73	714.56	313.83	400.73	52.38	15.31	366.21	416.04	782.25
Total constructed during year			.48	2.57	.48	2.57	3.05	.48	2.57	10.06	.80	10.54	3.37	13.91
Total within the State constructed during year			.48	2.57	.48	2.57	3.05	.48	2.57	10.06	.80	10.54	3.37	13.91

The length of rail is double the length of single track, columns (b) and (c) above.

	December 31, 1881—Within the State.		
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rails	732.42	44	32,226.48
Length of steel rails	822.66	39¾	32,397.36
	7.22	47½	349.80
Total length of iron rail laid during the year	21.08	44	927.52
Total length of steel rail laid during the year	46.30	39¾	1,818.92
Total length of iron rail replaced by steel rail during the year	7.42	47½	349.80
Of the iron rail the length of rerolled iron was	46.98	44	2.067.12

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TABLE E. OTHER AID OR GRANTS, FROM THE UNITED STATES, STATES, COUNTIES, CORPORATIONS, OR INDIVIDUALS.

Lands Granted by the United States Government.

To what Railroad Company.	Acres per Mile.	No. of Miles.	Number of Acres.			Estimated Value.	
			Total.	Less Reserved by Government.	Net Total.	Per Acre.	Total.
Southern Pacific	12.800	942	12,057.600	1,518.933	10,538.667	$2 50	$26,346,667 50

LANDS OR PROPERTY, INCLUDING RIGHT OF WAY, DONATED BY STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, STATING IN DETAIL THE AMOUNT OF LAND GRANTED FOR RIGHT OF WAY, FOR STATIONS, FOR SHOPS, FOR STOREHOUSES, ETC.

By Whom Donated.	Description of Property.	Assessed Value.
State of California	Half interest in sixty acres land at Mission Bay, San Francisco, with improvements	$124,122 50
City of Los Angeles	Fifteen acres in City of Los Angeles	6,000 00

NOTE.—Right of way included in contract for construction of road.

TABLE F. SALES OF LANDS GRANTED BY UNITED STATES GOVERNMENT.

Total Sales and Accrued Interest in Currency and Coin.

	Acres Sold.	Average Price.	Amount.		
			Principal.	Interest Accrued.	Total.
Lands to December 31, 1880	295,266.65½	$395,096 00	$1,166,589 61	$247,054 07	$1,441,191 36
Timber and stumpage			1,071 75		1,071 75
During the year ending December 31, 1881	183,505.74	5,035 00	924,101 57	61,277 45	985,379 02

AMOUNTS PAID AND DUE ON SALES ABOVE STATED—CURRENCY AND COIN.

	Amount Due.			Amount Paid.		
	Principal.	Accrued Interest.	Total.	Principal.	Interest.	Total.
To December 31, 1881	$1,014,892 99	$13,412 56	$1,028,305 55	$1,008,627 20	$294,918 96	$1,303,546 16
To December 31, 1880	554,822 66	43,731 80	598,554 46	624,283 76	203,322 27	827,606 03
During year ending December 31, 1881	460,070 33	6,849 19	466,919 52	384,343 44	91,506 69	475,940 13

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NET CASH RECEIPTS IN COIN, DEDUCTING DISCOUNT ON CURRENCY AND EXPENSES.

	Coin.	Net Coin Receipts.
To December 31, 1881		
During year	$1,303,546 16 475,940 13	$1,303,546 16 475,940 13

APPLICATION OF AMOUNT PLACED IN HANDS OF TRUSTEES FOR REDEMPTION OF BONDS (STATED IN COIN).

	Bonds Redeemed.			Total Received by Trustees.	Balance on Hand.	Discount on Bonds Redeemed.
	Number.	Amount.	Cost.			
To December 31, 1881	1,358	$1,037,000 00	$997,134 90	$1,303,546 16	$306,411 26	$39,865 10
During year	501	389,000 00	398,729 90	475,940 13	76,210 23	*10,729 90
Total	1,358	$1,037,000 00	$997,134 90	$1,303,546 16	$306,411 26	$39,865 10
Total net receipts, as above stated				$1,303,546 16		*Premium.

Patents received to December 31, 1881—number of acres	1,139,141.61
Number of purchasers to December 31, 1881	2,028
Average number of acres sold to each	561.707

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Charles Crocker, President of the Southern Pacific Railroad Company, and J. L. Willcutt, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

CHARLES CROCKER.
J. L. WILLCUTT.

Subscribed and sworn to before me, this ninth (9th) day of March, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

STOCKTON AND COPPEROPOLIS RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco
Charles F. Crocker, Vice-President	San Francisco.
Geo. Crocker, Treasurer	San Francisco.
W. V. Huntington	San Francisco.
E. H. Miller, Jr.	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ---- California.

The Stockton and Copperopolis Railroad Company was incorporated November 7, 1877, and formed by consolidation of the companies whose names and dates of incorporation are shown in the table below:

Names of Railroad Companies.	Dates of Incorporation.
Stockton and Copperopolis Railroad Company	October 11, 1865.
Stockton and Visalia Railroad Company	December 16, 1869.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$7,000,000 00
2.	Capital stock authorized by votes of company	7,000,000 00
3.	Capital stock issued [number of shares, 2,345]; amount paid in	234,500 00
5.	Total amount paid in as per books of the company	234,500 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders	14
10.	Number of stockholders in California	12
11.	Amount of stock held in California	205,200 00

DEBT.

12.	Funded debt as follows:		
	Interest paid on same during year	$25,000 00	
13.	Total amount of funded debt		$500,000 00
14.	Unfunded debt:		
	All other debts, current credit balances, etc.		198,587 41
16.	Total gross debt liabilities		$698,587 41
18.	Total net debt liabilities		$698,587 41

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COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

11. Total cost of construction, including rolling stock	$733,879 61

Equipment.

	No.	Cost.
12. Locomotives	3	Included above.
16. Passenger cars	3	
Baggage cars	1	
17. Freight cars	45	

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

27. Whole amount of permanent investments	$733,879 61
31. Total property and assets of the company	$733,879 61

REVENUE FOR THE YEAR.

Included in report of Central Pacific Railroad Company, lessee.

13. Derived from rents for use of road and equipment when leased	$72,002 11
Less general expense	5 50
Net earnings	$71,996 61

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$71,996 61
2. Percentage of same to capital stock and net debts	.07 1/10
3. Percentage of same to total property and assets	.09 8/10
4. Interest accrued during the year:	
On funded debt	$25,000 00
On other debt	11,204 48
Total	$36,240 48
7. Balance for the year (deficit)	$35,756 13
8. Deficit at commencement of the year	$234,963 93
9. Deficit at commencement of the year, as changed by aforesaid entries	234,963 93
Total deficit, December 31, 1881	$199,207 80

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

Included in lessee's report.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

Included in lessee's report.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$733,879 61
Profit and loss (loss)	199,207 80
Total	$933,087 41

Credits.

Capital stock	$234,500 00
Funded debt	500,000 00
Other debts	198,587 41
Total	$933,087 41

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Rental		$72,002 11
Interest	$36,240 48	
General expenses	5 50	
Balance profit	35,756 13	
	$72,002 11	$72,002 11

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Stockton to Milton and Oakdale	February, 1871.
3. Length of line with track laid, if road is not completed	32.6596 miles.
5. Branches owned by the company	1
Names and description of; single or double track:	
Branch—Peters to Milton (single track)	11.9928 miles.
6. Total length of branches owned by the company	11.9928 miles.
7. Total length of branches owned by the company in California	11.9928 miles.
10. Total length of road belonging to this company	44.6524 miles.
11. Aggregate length of siding and other tracks not enumerated above	3.3500 miles.
12. Same in California	3.3500 miles.
13. Aggregate length of track belonging to this company, computed as single	48.0024 miles.
14. Same in California	48.0024 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	4
18. Number of wooden bridges (aggregate length, 4,271 feet) in California	54
19. Number of crossings of highways at grade, in California	39
21. Number of crossings of highways under railroad, in California	2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	41
27. Number of railroad crossings at grade:	
Central Pacific Railroad at Stockton	1
37. Number of stations on all roads owned by this company	12
41. Number of telegraph offices in company stations	4

ROLLING STOCK.

	No.	Average Weight.	Market Value (Estimated).
1. Locomotives	3		
Average weight of engines in working order		48,233	
Maximum weight of engines in working order [60,000]			
2. Tenders	3		$24,000 00
Average weight of tenders full of fuel and water		25,000	
Maximum weight of tenders full of fuel and water [30,000]			
Average joint weight of engines and tenders		73,233	
3. Length of heaviest engine and tender from center of forward truck wheel of engine to center of rear wheel of tender [41.60 feet]			
4. Total length of heaviest engine and tender over all [49.80 feet]			
6. Passenger cars	3		14,000 00
Average weight		31,800	
Maximum weight [31,800]			
7. Mail and baggage cars	1	32,000	2,000 00
8. Eight-wheel box freight cars	4	18,000	3,200 00
10. Eight-wheel platform cars	41	13,500	28,700 00
13. Total market value			$71,900 00

14. Total number of freight cars, including coal, etc., on a basis of eight wheels 45

MILEAGE, TRAFFIC, ETC.

Included in lessee's report.

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TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Date.	Due.	In what Money Payable—Interest and Principal.	Interest.		Authorized Amount.	Total Issued December 31, 1881.	Accrued Interest during Year.	Amount of Bonds Outstanding December 31, 1881.
				Rate.	Payable.				
First mortgage	Jan. 1, 1875	Jan. 1, 1905	Gold	5 per cent.	Jan. and July	$500,000	$500,000	$25,000	$500,000

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1881.						
			Single.	Length of Roadway—Single and Double Track.		Reduced to Single Track.			
						Track.	Sidings.	Track and Sidings.	
Main Line and Branches.	From—	To—	Iron.	Iron.	Iron and Steel.	Iron.	Iron.	Iron.	Iron and Steel.
Main line within State	Stockton	Oakdale	32.6596	32.6596	32.6596	32.6596	2.9953	35.6549 (b)	35.6549
	Peters	Milton	11.9928	11.9928	11.9928	11.9928	.3547	12.3475	12.3475
Total on whole road, December 31, 1881			44.6524	44.6524	44.6524	44.6524	3.3500	48.0024	48.0024
Total constructed during year							.0758	.0758	.0758
Total within the State constructed during year							.0758	.0758	.0758

The length of rail is double the length of single track, column (b) above.	December 31, 1881—Within State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rail	96.0048	39.2857	3,771.6157
Total length of iron rail laid during the year	.1516	39.2857	5.9557

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GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

No information has been furnished whereby any grants made to the company could be entered on the books, the contract for building the road having stipulated that all grants should belong to the contractors as one of the considerations for construction.

OTHER AIDS OR GRANTS, FROM THE UNITED STATES, STATES, COUNTIES, CORPORATIONS, OR INDIVIDUALS.

Lands granted by the United States Government.

Lands granted by United States per act of Congress, March 4, 1867, were restored to the public domain by a further Act, approved June 15, 1874.

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Leland Stanford, President of the Stockton and Copperopolis Railroad Company, and James O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two (42) sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

LELAND STANFORD.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this fifteenth (15) day of March, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco.

STOCKTON AND VISALIA RAILROAD COMPANY.

FEBRUARY 21, 1881.

To the Board of Railroad Commissioners:

On November 17, 1877, this company was consolidated with the Stockton and Copperopolis Railroad Company, and assumed the name of the latter company. It has not now any separate corporate existence.

JAMES O'B. GUNN,
Secretary Stockton and Copperopolis Railroad Company.

TERMINAL RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Leland Stanford, President	San Francisco.
C. P. Huntington, Vice-President	New York.
E. W. Hopkins, Treasurer	San Francisco.
W. E. Brown	San Francisco.
Chas. Crocker	San Francisco.
E. H. Miller, Jr.	San Francisco.
R. Robinson	San Francisco.
J. O'B. Gunn, Secretary	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The Terminal Railway Company was incorporated January 30, 1867.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$4,000,000 00
2.	Capital stock authorized by votes of company	4,000,000 00
3.	Capital stock issued (number of shares, 275); amount paid in	27,500 00
5.	Total amount paid in as per books of the company	27,500 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders	9
10.	Number of stockholders in California	8
11.	Amount of stock held in California	20,700 00

DEBT.

14.	Unfunded debt: Incurred for construction, equipments, or purchase of property; All other debts, current credit balances, etc.	$3,712 17
18.	Total net debt liabilities	$3,712 17

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

11.	Total cost of construction	$31,212 17

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

27.	Whole amount of permanent investments	$31,212 17
31.	Total property and assets of the company	$31,212 17

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

No portion of the railroad of this company is completed, therefore the answer to the questions following herein is "nothing." See balance sheet.

20.	Net addition to property account for the year	$15 50

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$31,212 17
Total	$31,212 17

Credits.

Capital stock	$27,500 00
Other debts	3,712 00
Total	$31,212 17

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Leland Stanford, President of the Terminal Railway Company, and Jas. O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, pages one to ten and page eighteen, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

LELAND STANFORD.
JAS. O'B. GUNN.

Subscribed and sworn to before me, this twenty-first (21st) day of March, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

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VACA VALLEY AND CLEAR LAKE RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

A. M. Stevenson, President	Vacaville.
Leland Stanford, Vice-President	San Francisco.
Charles Crocker	San Francisco.
Timothy Hopkins	San Francisco.
J. O'B. Gunn, Secretary and Treasurer	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

San Francisco ..... California.

The Vaca Valley and Clear Lake Railroad Company purchased Vaca Valley Railroad—not an incorporation.

CAPITAL STOCK.

1. Capital stock authorized by charter		$1,000,000 00
2. Capital stock authorized by votes of company		500,000 00
4. Capital stock paid in on shares not issued	[Number of shares, 5,000]	250,000 00
5. Total amount paid in as per books of the company		250,000 00
8. Par value of shares		100 00
9. Total number of stockholders	7	
10. Number of stockholders in California	6	
11. Amount of stock held in California		249,900 00

DEBT.

14. Unfunded debt: Incurred for construction, equipment, or purchase of property		$134,424 03
15. Total amount of unfunded debt		134,424 03
16. Total gross debt liabilities		$134,424 03
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets		5,895 57
18. Total net debt liabilities		$128,528 46

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

7. Machine shops, including machinery and tools	$161,080 30

Equipment.

	No.	Cost.
12. Locomotives	2	$15,000 00
15. Sleeping cars	2	8,000 00
17. Freight cars	15	10,000 00
18. Total for equipment		$33,000 00

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

19. *Lands.*

Town lots in Madison and Winters (value about)	$5,500 00

24. *Investments in transportation lines.*

Purchase of the Vaca Valley Railroad	$250,000 00
26. Total for property purchased, etc.	250,000 00
27. Whole amount of permanent investments	199,580 30
29. Amount of supplies and materials on hand	5,895 57
31. Total property and assets of the company	455,475 87

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

19. Property sold and credited to property account during the year		$12,391 00
Passenger car stock sold	$4,500 00	
Lots in Madison sold	275 00	
Lots in Winters sold	902 75	
		5,677 75
20. Net addition to property account for the year		$6,713 25

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$7,595 85
5. Derived from express and extra baggage	1,706 24
6. Derived from mails	1,239 76
7. Total earnings from passenger department	$10,978 48
12. Total earnings from freight department	$71,978 48
14. Total transportation earnings	$82,520 33
15. Earnings per mile of road operated	$2,845 53
16. Earnings per train mile (total passenger and freight)	2 15

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$155 25
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	3,847 90
3. Insurance premiums and losses by fire, and damages for fires set by engines	900 25
5. Total	$4,903 40
6. Proportion belonging to passenger department—12½ per cent	$612 92
7. Proportion belonging to freight department—87½ per cent	4,290 48

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	
2. Iron rails laid, deducting old rails taken up	$13,826 30
3. Steel rails laid, deducting old rails taken up	
4. New ties	
5. Repairs of bridges	2,244 37
6. Repairs of buildings and fixtures (stations and turn-tables)	
7. Repairs of and additions to machine shops and machinery	1,393 56
8. Repairs of fences, road crossings, and signs	
9. Labor in gravel pit	2,895 59
10. Repairs of locomotives	805 29
14. Fuel for engines and cars: Number of cords of wood, 1,200; cost	5,100 00
15. Water and water stations	126 34
17. Oil and waste	497 08
19. Total	$26,888 53
20. Proportion of same to passenger department—12½ per cent	$3,361 06
21. Proportion of same to freight department—87½ per cent	23,527 47

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars	$867 15
3. Damages and gratuities, passengers	66 00
8. Total	$933 15

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Class IV—Freight traffic expenses.

1. Repairs of freight cars		$201 35
4. Salaries, wages, and incidentals of trains		6,180 85
5. Salaries, wages, and incidentals of stations		3,572 79
7. Amount paid other roads for balance of mileage of freight cars		917 00
Freight proportion	$9,652 79	
Passenger proportion	1,219 20	
8. Total		$10,871 99
9. Total expense of operating the road embraced in Classes I, II, III, and IV		$43,597 07
10. Per train mile (total passenger and freight)	$113 50	
11. Percentage of expenses to total tranportation earnings	52¾	
13. Total expenses		$43,597 07

NET INCOME, DIVIDENDS, ETC.

1. Total net income		$38,923 26
2. Percentage of same to capital stock and net debt	10.2	
3. Percentage of same to total property and assets	08.5	
4. Interest accrued during the year:		
On other debt	$15,158 61	
Total		$15,158 61
7. Balance for the year, or surplus		$23,764 65
8. Surplus at commencement of the year	$10,024 37	
Deduct entries made in profit and loss account during the year, not included in the foregoing statement	$3,088 88	
9. Surplus at commencement of the year, as changed by aforesaid entries		6,935 49
10. Total surplus, December 31, 1881		$30,700 14

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from Passenger Department, as per "Revenue for the Year," No. 7	$10,541 85
2. Per train mile	27
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	612 92
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	3,361 06
5. Expenses, "Passenger Traffic," as per Class III, No. 8	2,152 35
6. Total expenses	6,126 33
7. Per train mile	16
8. Net earnings	4,415 52
9. Per train mile	11

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from freight department, as per "Revenue for the Year," No. 12	$71,978 48
2. Per train mile	1 87
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	4,290 48
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per class II, No. 21	23,527 47
5. Expenses, "Freight Traffic," as per Class IV, No. 8	9,652 79
6. Total expenses	37,470 74
7. Per train mile	97
8. Net earnings	34,507 74
9. Per train mile	90

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$411,080 30
Cost of equipment	33,000 00
Cash, cash assets, and other items	250,000 00
Stockholders, current accounts	5,895 57
Total	$699,975 87

Credits.

Capital stock		$500,000 00
Other debts:		
Subsidies		21,808 50
Town of Madison	$1,156 35	
Town of Winters	1,475 85	13,043 20
Current accounts		134,424 03
Profit and loss (profit)		30,700 14
Total		$699,975 87

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Balance, December 31, 1880		$10,024 37
Loss on sale of passenger cars	$8,500 00	
Expense of ballasting road in 1879		6,387 00
Sundry bad debts written off	975 88	
Earnings for 1881		82,520 33
Operating expense, 1881	43,441 00	
Taxes, 1881	155 25	
Interest, 1881	15,158 61	
Balance to 1882	30,700 14	
	$98,931 70	$98,931 70

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Elmira to Vacaville	Jan. 25, 1869.
To Winters	Aug. 26, 1875.
To Madison	May 1, 1877.
2. Length of main line of road from Elmira to Madison	29 miles.
11. Aggregate length of siding and other tracks not enumerated above	2 miles.
12. Same in California	2 miles.
13. Aggregate length of track belonging to this company, computed as single track	31 miles.
14. Same in California	31 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	4
18. Number of wooden bridges in California	18
19. Number of crossings of highways at grade, in California	20
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	20
34. Total miles of road operated by this company	31
35. Total miles of road operated by this company in California	31
36. Number of stations on all roads operated by this company	6
37. Number of stations on all roads owned by this company	6
38. Same in California	6
39. Miles of telegraph on line of road operated by this company	30
41. Number of telegraph offices in company stations	3
42. Number of telegraph stations operated by this company	3
43. Number of telegraph stations operated jointly by railroad and telegraph companies	2

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ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	2		$12,000 00
Average weight of engines in working order		24 tons	
Maximum weight of engines in working order--[28 tons]			
2. Tenders	2		
6. Passenger cars, and baggage combined	2		3,500 00
9. Four-wheel box freight cars	5		2,000 00
11. Four-wheel platform cars	10		2,500 00
13. Total market value			$20,000 00

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	15
17. Number of passenger cars, with Miller platform and buffer	1

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	38,400
2. Rate of speed of express passenger trains, including stops	15 miles.
3. Rate of speed of accommodation trains, including stops	15 miles.
5. Rate of speed of express freight trains, including stops	15 miles.
6. Rate of speed of accommodation freight trains, including stops	15 miles.
8. Total train miles run	38,400
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	5 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	8 cents.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	8 cents.
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	No season tickets.
20. Average rate of fare per mile for all passengers	8 cents.
21. Highest rate of freight per ton per mile for any distance	20 cents.
22. Lowest rate of freight per ton per mile for any distance	4¼ cents.
23. Average rate of local freight per ton per mile on roads operated by this company	7 cents.
24. Average rate of freight per ton per mile, to and from other roads	7 cents.
25. Average rate of freight per ton per mile for all	7 cents.
30. Number of persons regularly employed by company, including officers	20
Average monthly pay of employés, other than officers	$65 00
Average monthly pay of engine drivers	100 00
Average monthly pay of passenger conductors	100 00
Average monthly pay of freight conductors	65 00
Average monthly pay of baggage masters	50 00
Average monthly pay of brakemen, flagmen, and switchmen	50 00
Average monthly pay of section men	50 00
Average monthly pay of laborers	50 00

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track December 31, 1881—Single.
Main Line and Branches.	From—	To—	Iron.
Main line within State	Elmira	Madison	29

The length of rail is double the length of single track.	December 31, 1881. Within State.		
	Length in Miles.	Average Weight per Mile (Tons).	Total. Weight (Tons).
Length of iron rail	62	40	2,480

TABLE D. GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

Given in cash and notes by individuals in 1878	$23,157 50
Total amount of cash realized	21,808 50

STATE OF CALIFORNIA, City and County of San Francisco. } ss.

Leland Stanford, Vice-President of the Vaca Valley and Clear Lake Railroad Company, and James O'B. Gunn, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two pages, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

LELAND STANFORD.
JAS. O'B. GUNN.

Subscribed and sworn to before me this fifteenth day of March, 1882.

CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco.

VISALIA RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

R. E. Hyde, President ..... Visalia.
E. Jacobs, Vice-President ..... Visalia.
Solomon Sweet, Secretary ..... Visalia.
John Cutler, Treasurer ..... Visalia.

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NAMES OF DIRECTORS.

R. E. Hyde	Visalia.
E. Jacobs	Visalia.
Solomon Sweet	Visalia.
John Cutler	Visalia.
James Fisher	Visalia.

BUSINESS ADDRESS OF THE COMPANY:

Visalia, Tulare County ..... California.

The Visalia Railroad Company was incorporated May 21, 1874.

CAPITAL STOCK.

1. Capital stock authorized by charter	$100,000 00
2. Capital stock authorized by votes of company	100,000 00
3. Capital stock issued (number of shares, 1,000); amount paid in	82,025 00
8. Par value of shares issued	100 00
9. Total number of stockholders	86
10. Number of stockholders in California	86
11. Amount of stock held in California	All.
17. Amount of cash, materials, and supplies on hand; sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:	
Cash on hand	6,444 83
Materials and supplies on hand	550 00

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

11. Total cost of construction	$81,916 20

Equipment.

18. Total for equipment	$26,700 00

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

Visalia, Tulare County, California—depot and land on which situated	$3,000 00

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$5,490 29
4. Derived from other sources belonging to passenger department	368 72
5. Derived from express and extra baggage	535 42
6. Derived from mails	232 80
7. Total earnings from passenger department	$6,627 23
8. Derived from local freight on roads operated by this company	$13,749 31
12. Total earnings from freight department	$13,749 31
14. Total transportation earnings	$20,376 54

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$476 32
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV	8,076 66
3. Insurance premiums and losses by fire, and damages for fires set by engines	73 15
5. Total	$8,626 13

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$967 59
10. Repairs of locomotives	139 70
14. Fuel for engines and cars:	
Number of cords of wood, 196; cost, $3 50	686 00
17. Oil and waste	85 14
19. Total	$1,878 43

Class IV—Freight traffic expenses.

6. Paid corporations or individuals not operating roads for use of freight cars	$1,152 06
13. Total expenses	$1,152 06

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$81,916 20
Cost of equipment	26,700 00
Other investments	3,000 00
Cash, cash assets, and other items	6,444 83
Total	$118,061 03

Credits.

Capital stock	$82,025 00
Profit and loss (profit)	$36,036 03
Total	$118,061 03

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
Visalia to Goshen	September, 1874.
2. Length of main line of road from Visalia to Goshen	7⅓ miles.
Length of main line in California	7⅓ miles.
10. Total length of road belonging to this company	7⅓ miles.
11. Aggregate length of siding and other tracks not enumerated above	1 mile.
12. Same in California	1 mile.
13. Aggregate length of track belonging to this company computed as single track	8⅓ miles.
14. Same in California	8⅓ miles.

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives:			
Average weight of engines in working order	2	15 tons.	$7,500 00
6. Passenger cars	1	6 tons.	4,500 00
Average weight	---	6 tons.	---
Maximum weight	---	6 tons.	---
7. Mail and baggage cars	1	3 tons.	1,500 00
13. Total market value	---	---	$13,500 00

MILEAGE, TRAFFIC, ETC.

15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	10 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	10 cents.
18. Average rate of fare per mile received from passengers to and from other roads	10 cents
20. Average rate of fare per mile for all passengers	10 cents
21. Highest rate of freight per ton per mile for any distance	$68\frac{2}{11}$ cents

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22. Lowest rate of freight per ton per mile for any distance	2 cents.
23. Average rate of local freight per ton per mile on roads operated by this company	41 cents.
24. Average rate of freight per ton per mile to and from other roads	41 cents.
25. Average rate of freight per ton per mile for all	41 cents.
26. Average number of cars in passenger trains (including baggage cars)	1

STATE OF CALIFORNIA, County of Tulare. } ss.

R. E. Hyde, President of the Visalia Railroad Company, and Solomon Sweet, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-two (42) sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

R. E. HYDE, President.
S. SWEET, Secretary.

Subscribed and sworn to before me, this twentieth day of February, 1882.

JULIUS LEVY,
Notary Public.

NARROW GAUGE ROADS.

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NARROW GAUGE ROADS

BAY AND COAST RAILROAD COMPANY.

No report made by this company for the year ending December 31, 1881. The road is operated by the South Pacific Coast Railroad Company, and the operations of the same for the year are included in the report of said company.

NEVADA COUNTY NARROW GAUGE RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

John C. Coleman, President	Grass Valley.
Edward Coleman, Vice-President	Grass Valley.
George Fletcher, Secretary and Auditor	Grass Valley.
F. G. Beatty, Treasurer	Grass Valley.
John F. Kidder, General Superintendent	Grass Valley.

NAMES OF DIRECTORS:

John C. Coleman	Grass Valley.
Edward Coleman	Grass Valley.
James M. Lakeman	Grass Valley.
George D. McLean	Sweetland.
Niles Searls	Nevada City.
R. M. Hunt	Nevada City.
M. S. Marsh	Nevada City.

BUSINESS ADDRESS OF THE COMPANY:

Grass Valley, Nevada County ---- California.

The Nevada County Narrow Gauge Railroad Company was incorporated April 4, 1874.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$400,000 00
3.	Capital stock issued [number of shares, 2,422]; amount paid in	242,200 00
4.	Capital stock paid in on shares not issued [number of shares, 18]	650 00
5.	Total amount paid in as per books of the company	242,850 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders	136
10.	Number of stockholders in California	136
11.	Amount of stock held in California	242,200 00

DEBT.

12.	Funded debt as follows:		
	Bonds		$260,000 00
	Interest paid on same during year	$19,114 75	
13.	Total amount of funded debt		260,000 00
16.	Total gross debt liabilities		260,000 00

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17. Amount of cash, materials, and supplies on hand, sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:	
Cash on hand	$7,497 69
Materials and supplies on hand	21,222 32
Other securities and debt balances	935 64
	$29,655 65
18. Total net debt liabilities	$230,344 35

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	$239,856 69
2. Bridging	46,069 37
3. Superstructure, including rails	162,429 13
4. Land:	
Land damages	24,647 02
5. Passenger and freight stations	11,380 41
6. Engine houses and car sheds, and turn-tables	6,425 16
7. Machine shops, including machinery and tools	7,540 53
9. Engineering	12,901 32
Agencies, salaries, and other expenses during construction	7,054 33
Section and tool houses, and other buildings	4,266 93
11. Total cost of construction	$522,570 89

Equipment.

	No.	Cost.
12. Locomotives	3	$27,904 28
16. Passenger cars	2	7,612 32
Baggage cars (combination)	2	6,216 76
17. Freight cars	38	27,985 56
Other cars	------	1,445 54
18. Total for equipment	------	$71,164 46

PROPERTY PURCHASED AND ON HAND, NOT INCLUDED IN THE FOREGOING ACCOUNTS.

22. *Other Securities.*

	Nominal Amount.	Price Paid.
$9\frac{36}{100}$ shares of capital stock of Citizens' Bank, Nevada City	$935 64	$935 64

26. Total for property purchased, etc.	$935 64
27. Whole amount of permanent investments	593,735 35
29. Amount of supplies and materials on hand	21,222 32
30. Cash and cash assets	7,497 69
31. Total property and assets of the company	$623,391 00

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry	$523 00
3. Superstructure, including rails	256 67
4. Land:	
Land damages	104 55
5. Passenger and freight stations	2,102 51
14. Freight and other cars [Number, 3]	1,750 29
18. Total	$4,737 02
20. Net addition to property account for the year	4,737 02

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$41,294 46
5. Derived from express and extra baggage	2,802 37
6. Derived from mails	1,129 32
7. Total earnings from passenger department	$45,226 15
8. Derived from local freight on roads operated by this company	$67,065 76
11. Derived from other sources belonging to freight department	4,174 00
12. Total earnings from freight department	$71,239 76
14. Total transportation earnings	$116,465 91
15. Earnings per mile of road operated	$5,144 25
16. Earnings per train mile (total passenger and freight)	1 69
18. Income derived from all other sources (including accretions from sinking funds, investments in stock, bonds, steamboat property, transportation lines, etc.):	
Dividend Citizens' Bank stock	18 72
19. Total income derived from all sources	$116,484 63

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$3,824 49
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
General salaries	4,440 00
Legal services and expenses	856 95
Injuries to persons (employés)	512 75
Injuries to stock	75 00
Office furniture	43 50
Advertising	601 40
Stationery and printing	793 08
Rent	105 00
Wrecking	240 00
3. Insurance premiums and losses by fire, and damages for fires set by engines	469 00
5. Total	$11,961 17
6. Proportion belonging to passenger department	$4,644 80
7. Proportion belonging to freight department	7,316 37

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$11,515 94
5. Repairs of bridges	1,740 00
6. Repairs of buildings and fixtures (stations and turn-tables)	1,678 82
7. Repairs of and additions to machine shops and machinery	548 56
8. Repairs of fences, road crossings, and signs	271 76
9. Removing ice and snow	46 33
11. New locomotives, charged to operating expenses	4,868 46
14. Fuel for engines and cars:	
Number of cords of wood, 1,783; cost	6,417 00
15. Water and water stations	432 25
16. Fuel for stations and shops	1,083 00
17. Oil and waste	1,481 72
19. Total	$30,083 84
20. Proportion of same to passenger department	$11,682 39
21. Proportion of same to freight department	18,401 45

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars	$2,174 37
4. Salaries, wages, and incidentals of passenger trains	5,728 19
5. Salaries, wages, and incidentals of passenger stations	4,272 79
8. Total	$12,175 35

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Class IV—Freight traffic expenses.

1.	Repairs of freight cars	$1,695 22
	Repairs of dump and work cars	149 15
3.	Damages and gratuities, freight	407 99
4.	Salaries, wages, and incidentals of freight trains	9,022 29
5.	Salaries, wages, and incidentals of freight stations	6,730 93
8.	Total	$18,006 28
10.	Per train mile (total passenger and freight) — $1 05	
11.	Percentage of expenses to total transportation earnings — 62.01	
13.	Total expenses	$72,226 64

NET INCOME, DIVIDENDS, ETC.

1.	Total net income	$44,239 27
2.	Percentage of same to capital stock and net debt — 9.37	
3.	Percentage of same to total property and assets — 7.09	
4.	Interest accrued during the year:	
	On funded debt	19,114 75
5.	Dividends declared (3 per cent) for the year	7,266 00
6.	Date of last dividend declared	September 6.
7.	Balance for the year, or surplus	$17,858 52
8.	Surplus at commencement of the year — $102,391 79	
	Add entries made in profit and loss account during the year, not included in the foregoing statement — $940 69	
9.	Surplus at commencement of the year, as changed by aforesaid entries	103,332 48
10.	Total surplus, December 31, 1881	$121,191 00

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1.	Total earnings from Passenger Department, as per "Revenue for the Year," No. 7	$45,226 15
2.	Per passenger train mile	1 12
3.	Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	4,644 80
4.	Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	11,682 39
5.	Expenses, "Passenger Traffic," as per Class III, No. 8	12,175 35
6.	Total expenses	28,502 54
7.	Per passenger train mile	70
8.	Net earnings	16,723 61
9.	Per passenger train mile	41

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1.	Total earnings from Freight Department, as per "Revenue for the Year," No. 12	$71,239 76
2.	Per freight train mile	2 52
3.	Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	7,316 37
4.	Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 21	18,401 45
5.	Expenses, "Freight Traffic," as per Class IV, No. 8	18,006 28
6.	Total expenses	43,724 10
7.	Per freight train mile	1 55
8.	Net earnings	27,515 66
9.	Per freight train mile	96

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$522,570 89
Cost of equipment	71,164 46
Other investments	935 64
Supplies and materials on hand	21,222 32
Cash, cash assets, and other items	7,497 69
Total	$623,391 01

Credits.

Capital stock	$242,200 00
Funded debt	260,000 00
Profit and loss (profit)	121,191 00
Total	$623,391 00

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Gross earnings		$116,465 91
Premium on ten bonds sold		1,000 50
Dividend Citizens' Bank stock		18 72
Operating expenses	$72,226 64	
Interest account	19,114 75	
Commission paid	78 53	
Dividend No. 1	7,266 00	
Profit to balance	18,799 21	
	$117,485 13	$117,485 13

DESCRIPTION OF ROAD.

1.	Date when the road or portions thereof were opened for public use:	
	From Colfax to Grass Valley	April 17, 1876.
	From Colfax to Nevada City	May 24, 1876.
2.	Length of main line of road from Colfax to Nevada City	22 64/100 miles.
10.	Total length of road belonging to this company	22 64/100 miles.
11.	Aggregate length of siding and other tracks not enumerated above	1.72 miles.
13.	Aggregate length of track belonging to this company computed as single track	24 36/100 miles.
16.	Number of spans of bridges of twenty-five feet and upwards, in California	2
18.	Number of wooden bridges (aggregate length, 320 feet) in California	2
19.	Number of crossings of highways at grade, in California	19
20.	Number of crossings of highways over railroad, in California	2
21.	Number of crossings of highways under railroad, in California	1
22.	Number of highway bridges less than eighteen feet above track, in California	1
26.	Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	22
27.	Number of railroad crossings at grade	1
29.	Number of railroad crossings under other railroads:	
	Central Pacific at Long Ravine, near Colfax	1
34.	Total miles of road operated by this company	22.64
35.	Total miles of road operated by this company in California	22.64
36.	Number of stations on all roads operated by this company	9
37.	Number of stations on all roads owned by this company	9
38.	Same in California	6
39.	Miles of telegraph on line of road operated by this company	22.64
41.	Number of telegraph offices in company stations	3
42.	Number of telegraph stations operated by this company	3

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ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	3	36,000	$11,600 00
Maximum weight of engines in working order [18 tons]			
2. Tenders	3		
Maximum weight of tenders full of fuel and water [10 tons]			
Average joint weight of engines and tenders		56,000	
6. Passenger cars	2		3,600 00
Maximum weight [11 tons]			
7. Mail and baggage cars (combination)	2		2,400 00
8. Eight-wheel box freight cars	19		6,000 00
10. Eight-wheel platform cars	19		5,000 00
12. Other cars	5		160 00
13. Total market value			$28,760 00

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	38
15. Number of locomotives equipped with train brakes—kind of brake: Westinghouse air brake	2
16. Number of cars equipped with train brakes- kind of brake: Westinghouse air brake	4
17. Number of passenger cars with Miller platform and buffer	4

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	19,111
2. Rate of speed of express passenger trains, including stops	11½
3. Rate of speed of accommodation trains, including stops	11½
4. Miles run by freight trains	6,541
5. Rate of speed of express freight trains, including stops	10
6. Rate of speed of accommodation freight trains, including stops	10
7. Miles run by other trains, and for what purpose:	
Mixed passenger and freight	43,165
Service trains	4,201
8. Total train miles run	52,767
9. Total number of passengers carried:	
Number of through passengers going toward Colfax	8,058
Number of through passengers going contrary direction	7,983
Number of local passengers going toward Colfax	17,907
Number of local passengers going contrary direction	18,819
10. Total passenger mileage, or passengers carried one mile	508,916
11. Passenger mileage to and from other roads	318,560
Average number of miles traveled by each local passenger	5.18
Average number of miles traveled by each through passenger	19.85
Average number of miles traveled by each passenger, through and local	9.64
12. Number of tons of freight carried (not including gravel)	29,947 1234/2000
Number of tons freight produced in this State, carried	15,496 1647/2000
Number of tons of each class of freight, produced in this State, carried:	
Wood and lumber	6,364 1580/2000
Flour, grain, and feed	5,262 1032/2000
Hay	2,440 587/2000
Fruit	414 1674/2000
Ores	140 1277/2000
Hides and pelts	130 1555/2000
Powder	742 1932/2000
13. Total freight mileage, or tons carried one mile	426,954
15. Highest rate of fare per mile for any distance (excluding one mile)	10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	5½ cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	5.81 cents.
18. Average rate of fare per mile received from passengers to and from other roads	10 cents.
20. Average rate of fare per mile for all passengers	8.14 cents.
21. Highest rate of freight per ton per mile for any distance	20 cents.
Under seven miles	25 cents.

22. Lowest rate of freight per ton per mile for any distance	3¾ cents.
Under five miles	7½ cents.
25. Average rate of freight per ton per mile for all	16.89 cents.
26. Average number of cars in passenger trains (including baggage cars)	2.13
27. Average number of cars in freight trains—basis of eight-wheel	2.88
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	42 1349/2000
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	35 49/2000
30. Number of persons regularly employed by company, including officers	50
Average monthly pay of employés, other than officers	$64 25
Average monthly pay of engine drivers	111 25
Average monthly pay of passenger conductors	100 00
Average monthly pay of freight conductors	90 00
Average monthly pay of baggage masters	75 00
Average monthly pay of brakemen, flagmen, and switchmen	65 00
Average monthly pay of section men	52 00
Average monthly pay of mechanics in shops	91 00
Average monthly pay of laborers	52 00

12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Series	Date.	Due.	In what Money Payable. Interest and Principal.
First mortgage on road and equipments	1 25	Jan. 1, 1876	Jan. 1, 1896	U. S. Gold.

TABLE A—Continued.

Interest.		Authorized Amount.	Total Issued December 31, 1881.	Accrued Interest.		Amount of Bonds outstanding December 31, 1881.
Rate.	Payable.			To Dec. 31, 1881.	During year.	
8 per cent	Jan. and July	$325,000 00	$260,000 00	$133,397 48	$19,114 75	$260,000 00

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, Dec. 31, 1881. Single.
Main Line and Branches.	From—	To—	Iron.
Main line within State	Colfax	Nevada City	22 64/100

	December 31, 1881—Within the State.		
	Length in Miles.	Average Weight per Mile.	Total Weight (Tons).
Length of iron rail	48.72	27.1120	1,337.1340

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STATE OF CALIFORNIA, County of Nevada. } ss.

John F. Kidder, Superintendent of the Nevada County Narrow Gauge Railroad Company, and George Fletcher, Secretary of the said company, being duly sworn, depose and say that the statements, tables, and answers contained in the foregoing twenty sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

JOHN F. KIDDER.
GEORGE FLETCHER.

Subscribed and sworn to before me, this tenth day of March, 1882.

WM. K. SPENCER,
Notary Public, Nevada County.

NORTH PACIFIC COAST RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

James D. Walker, President	San Rafael.
W. Steel, Vice-President	San Francisco.
W. Young	San Francisco.
T. Menzies	San Francisco.
M. M. Tompkins	San Rafael.
David Nye	San Rafael.
W. Babcock	San Francisco.
David Nye, General Superintendent	San Rafael.
W. F. Russell, General Freight Agent	San Francisco.
F. B. Latham, General Ticket Agent	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

No. 430 California Street—San Francisco, California.

The North Pacific Coast Railroad Company was incorporated December 16, 1871.

CAPITAL STOCK.

1. Capital stock authorized by charter		$1,500,000 00
2. Capital stock authorized by votes of company		3,000,000 00
3. Capital stock issued [number of shares, 2,500]; amount paid in		250,000 00
5. Total amount paid in as per books of the company		250,000 00
8. Par value of shares issued (per share)		100 00
9. Total number of stockholders	9	
10. Number of stockholders in California	9	
11. Amount of stock held in California		2,500,000 00

DEBT.

12. Funded debt as follows:		
Bonds		$1,100,000 00
13. Total amount of funded debt		$1,100,000 00
14. Unfunded debt:		
All other debts, current credit balances, etc	$26,716 17	
15. Total amount of unfunded debt		26,716 17
16. Total gross debt liabilities		$1,126,716 17
17. Amount of cash, materials, and supplies on hand, sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:		
Cash on hand	$5,051 40	
Materials and supplies on hand	1,468 50	
Other securities and debt balances	20,196 27	
		26,716 17
18. Total net debt liabilities		$1,100,000 00

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

11. Total cost of construction	Not kept separately.

Equipment.

18. Total equipment and construction	$2,800,000 00
27. Whole amount of permanent investments	2,800,000 00
28. Property in California	2,800,000 00
29. Amount of supplies and materials on hand	1,468 50
30. Cash and cash assets	25,247 67
31. Total property and assets of the company	2,826,716 17

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company		$127,437 21
2. Derived from passengers from and to other roads, over roads operated by this company		5,621 90
5. Derived from express		13,900 57
6. Derived from mails		4,349 65
7. Total earnings from passenger department		$151,349 33
8. Derived from local freight on roads operated by this company		$116,212 65
12. Total earnings from freight department		$116,212 65
		$267,561 98
14. Total transportation earnings	$2,932 18	
15. Earnings per mile of road operated (91¼ miles)	1 18	
16. Earnings per train mile (total passenger and freight)		
17. Income derived from rent of property, other than road and equipment:		
Charter	4,650 00	
Rents	4,016 00	
Privilege selling papers, fruit, etc.	958 54	
		9,624 54
19. Total income derived from all sources		$277,186 52

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local		Charged to profit and loss.
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:		
General office	$13,170 57	
Superintendents	6,340 27	
Incidentals	1,804 31	
Injuries to live stock	408 00	
Stationery and printing	1,807 62	
Rents	5,300 00	
Legal services	3,327 25	
Advertising	2,163 50	
		$34,321 52
3. Insurance premiums and losses by fire, and damages for fires set by engines		939 66
5. Total		$35,261 18
6. Proportion belonging to passenger department*		$19,182 17
7. Proportion belonging to freight department*		16,079 01

*Equal division, except advertising and insurance.

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Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)		$28,573 71
5. Repairs of bridges		2,988 32
6. Repairs of buildings and fixtures (stations and turn-tables)		1,308 34
7. Repairs of and additions to machine shops and machinery		200 05
8. Repairs of fences, road crossings, and signs		222 62
10. Repairs of locomotives		3,111 81
12. Repairs of wharves		156 56
14. Fuel for engines and cars:		
Number of cords of wood, 3,871.75; cost	$15,487 00	
Number of tons of coal, 3,308 1120/2240; cost	25,916 15	
		41,403 15
15. Water and water stations		1,117 05
16. Fuel for stations and shops		Not separated.
17. Oil and waste		1,678 63
19. Total		$80,760 24
20. Proportion of same to passenger department*		$50,500 45
21. Proportion of same to freight department*		30,259 79

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars		$2,688 98
3. Damages and gratuities, passengers		73 50
4. Salaries, wages, and incidentals of passenger trains	$11,969 99	
Salaries, wages, and incidentals of ferries	26,564 40	
		38,534 39
5. Salaries, wages, and incidentals of passenger stations		9,973 01
8. Total		$51,269 88

Class IV—Freight traffic expenses.

1. Repairs of freight cars		$3,616 60
Repairs of dump and work cars		39 33
3. Damages and gratuities, freight		446 90
4. Salaries, wages, and incidentals of freight trains	$10,855 24	
Salaries, wages, and incidentals of ferries	15,969 89	
		26,825 13
5. Salaries, wages, and incidentals of freight stations		9,973 01
8. Total		$40,900 97
9. Total expenses of operating the road embraced in Classes I, II, III, and IV		$208,192 27
10. Per train mile (total passenger and freight)	.92	
11. Percentage of expenses to total transportation earnings	.78	
13. Total expenses		$208,192 27

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$68,994 25
2. Percentage of same to capital stock and net debt	1 91
3. Percentage of same to total property and assets	2 44

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

1. Total earnings from Passenger Department, as per "Revenue for the Year," No. 7	$151,349 33
2. Per passenger train mile	1 04
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 6	19,182 17
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 20	50,500 45
5. Expenses, "Passenger Traffic," as per Class III, No. 8	51,269 88
6. Total expenses	120,952 50
7. Per passenger train mile	83
8. Net earnings	30,396 83
9. Per passenger train mile	21

* Equal division, except fuel.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

1. Total earnings from Freight Department, as per "Revenue for the Year," No. 12	$116,212 65
2. Per freight train mile	1 40
3. Expenses, proportion of "General Traffic Expenses," as per Class I, No. 7	16,079 79
4. Expenses, proportion of "Maintenance of Way and Buildings, and Movement Expenses," as per Class II, No. 21	30,259 79
5. Expenses, "Freight Traffic," as per Class IV, No. 8	40,259 97
6. Total expenses	87,239 77
7. Per freight train mile	1 09
8. Net earnings	28,972 88
9. Per freight train mile	37

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road		$2,800,000 00
Cost of equipment		1,468 50
Other investments		
Cash, cash assets, and other items:		
Cash	$5,051 40	
Agents	3,541 59	
Sundry persons	16,654 68	
		$25,247 67
Profit and loss (loss)		800,000 00
Total		$3,626,716 17

Credits.

Capital stock	$2,500,000 00
Funded debt	1,100,000 00
Other debts	26,716 17
Total	$3,626,716 17

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Earnings		$277,186 52
Operating expenses	$208,192 27	
Interest, discount, taxes, etc.	346,196 41	

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Saucelito to Tomales	January 11, 1875.
From Tomales to Howard's	October 16, 1876.
From Howard's to Tyrone	April 2, 1877
From Tyrone to Duncan's	May 15, 1877.
2. Length of main line of road from San Francisco to Duncan's	80¼ miles.
5. Branches owned by the company:	
Names and description of, single or double track:	
Our own; single	2 miles.
6. Total length of branches owned by the company	2 miles.
7. Total length of branches owned by the company in California	2 miles.
10. Total length of road belonging to this company	87¾ miles.
11. Aggregate length of siding and other tracks not enumerated above	9¾ miles.
12. Same in California	All.
13. Aggregate length of track belonging to this company computed as single track	All.
14. Same in California	All.
16. Number of spans of bridges of twenty-five feet and upwards, in California	13
18. Number of wooden bridges in California	13
19. Number of crossings of highways at grade, in California	26

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ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY UNDER LEASE OR CONTRACT.

30. *Names, Description, and Length of Each.*

Name of Company—	Termini. From—	Termini. To—	Length (Miles).
San Rafael and San Quentin R. R. Co.	San Rafael	San Quentin	3½

Dates of Lease. From—	Dates of Lease. To—	Amount of Rental.
March 11, 1875	March 11, 1918	$1 per annum.

31. Total length of above roads	3½ miles.
32. Total length of above roads in California	3½ miles.
34. Total miles of road operated by this company	91¼
35. Total miles of road operated by this company in California	All.
36. Number of stations on all roads operated by this company	39
37. Number of stations on all roads owned by this company	37
38. Same in California	All.
39. Miles of telegraph on line of road operated by this company	79¾
41. Number of telegraph offices in company stations	14
43. Number of telegraph stations operated jointly by railroad and telegraph companies	14

ROLLING STOCK.

	No.	Average Weight.	Cost.
1. Locomotives	11		$65,000
Average weight of engines in working order		43,170	
2. Tenders	10		
Average weight of tenders full of fuel and water		22,580	
Average joint weight of engines and tenders		65,750	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender	[38 feet]		
4. Total length of heaviest engine and tender over all	[42 feet]		
6. Passenger cars	16		48,000
Average weight		12,000	
7. Mail and baggage cars	3	11,000	4,500
8. Eight-wheel box freight cars	30	10,000	12,000
10. Eight-wheel platform cars	270	8,000	81,000
12. Other cars	1	16,000	5,000
13. Total market value			$215,500

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	300
15. Number of locomotives equipped with train brakes—kind of brake: Westinghouse air	4
16. Number of cars equipped with train brakes—kind of brake: Westinghouse air	16
17. Number of passenger cars with Miller platform and buffer	16

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	145,502
2. Rate of speed of express passenger trains, including stops	15 miles.
3. Rate of speed of accommodation trains, including stops	10 miles.
4. Miles run by freight trains	79,648.
6. Rate of speed, accommodation freight trains, including stops	10 miles.
7. Miles run by other trains, and for what purpose	15,145
8. Total train miles run	240,295
9. Total number of passengers carried	408,345
Number of local passengers going north	202,770
Number of local passengers going south	205,579
10. Total passenger mileage, or passengers carried one mile	No statistics.
Average number of miles traveled by each local passenger	No statistics.
Average number of miles traveled by each through passenger	No statistics.
Average number of miles traveled by each passenger, through and local	No statistics.
12. Number of tons freight carried (not including gravel)	45,833 1958/2000
Number of tons freight in this State, carried	All.
Number of tons freight produced in this State, carried	No statistics.
Number of tons of each class of freight produced in this State, carried	No statistics.
13. Total freight mileage, or tons carried one mile	No statistics.
15. Highest rate of fare per mile for any distance (excluding one mile)	8 5/10 cents.
16. Lowest rate of fare per mile for any distance (single fare)	3⅓ cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	No statistics.
Average rate of fare per mile received from local passengers on roads operated by this company, not including ferry or season tickets	No statistics.
19. Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	6/10 cents.
20. Average rate of fare per mile for all passengers	No statistics.
21. Highest rate of freight per ton per mile for any distance	46⅔ cents.
22. Lowest rate of freight per ton per mile for any distance	3⅓ cents.
23. Average rate of local freight per ton per mile on roads operated by this company	No statistics.
25. Average rate of freight per ton per mile for all	No statistics.
Average rate of freight per ton per mile, products of this State	No statistics.
Average rate of freight per ton per mile, products of other States	No statistics.
26. Average number of cars in passenger trains (including baggage cars)	4
27. Average number of cars in freight trains—basis of eight-wheel	20
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	104,000
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	226,000
30. Number of persons regularly employed by company, including officers	271
Average monthly pay of employés, other than officers	$37 00
Average monthly pay of engine drivers	100 00
Average monthly pay of passenger conductors	90 00
Average monthly pay of freight conductors	85 00
Average monthly pay of baggagemasters	60 00
Average monthly pay of brakemen, flagmen, and switchmen	60 00
Average monthly pay of section men	70 00
Average monthly pay of mechanics in shops	90 00
Average monthly pay of laborers	24 00

Relating to Passengers.

1. Total season ticket passengers (round trip): See answer to Number 4. Commutations sold only between San Rafael and San Francisco.	189,357
2. Passengers to San Francisco (including season)	175,249
3. Passengers from San Francisco (including season)	114,300
4. Season ticket passengers to and from San Francisco (one round trip daily)	

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12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Series.	Date.	Due.	In what Money Payable—Interest and Principal.	Interest. Rate.	Interest. Payable.	Authorized Amount.	Total Issued December 31, 1881.	Amount of Bonds Outstanding December 31, 1881.
First mortgage	1/600	Nov. 14, 1881	Nov. 1, 1900	U. S. gold coin	6 per cent.	May 1 and Nov. 1	$600,000	$600,000	$600,000
Second mortgage	1/500	Nov. 14, 1881	Nov. 1, 1900	U. S. gold coin	6 per cent.	May 1 and Nov. 1	500,000	500,000	500,000
							$1,100,000	$1,100,000	$1,100,000

Character of.	Series.	Bonds Sold During Year Ending December 31, 1881. Amount of Bonds.	Amount Realized.	Discount, or Premium.
First mortgage	1/600	$600,000 00	$600,000 00	Par.
Second mortgage	1/500	500,000 00	500,000 00	Par.

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1881. Single.	Reduced to Single Track. Track.	Sidings.	Track and Sidings.
Main Line and Branches	From—	To—	Iron.	Iron.	Iron.	Iron.
						(b)
Main line within State	Saucelito	Duncan's	74½			
	Junction	San Rafael	2	76¼	9¾	86
Total on whole road, December 31, 1881			76¼			

The length of rail is double the length of single track, column (b) above.	December 31, 1881—Within the State. Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).	Length in Miles.	Averagge Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rail	152½	42½	64	172	42½	7,310

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TABLE D. GRANTS OR DONATIONS, IN BONDS OR MONEY, FROM STATES, COUNTIES, TOWNS, CORPORATIONS, OR INDIVIDUALS, NOT REPAYABLE BY COMPANY.

Bonds.			Interest Payable.		
Character of.	Date.	Due.	By Whom.	When.	Rate.
County	May 5, 1876	May 5, 1896	Marin County	Semi-annually	7 per cent

TABLE D—Continued.

Total Amount of Bonds or Cash.	Disposed of.		
	Amount of Bonds.	Cash Realized.	Discount.
$160,000 00	$160,000 00	$144,208 00	$15,792 00

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

David Nye, General Superintendent of the North Pacific Coast Railroad Company, being duly sworn, deposes and says, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that he, the deponent, has carefully examined the same, and that as now furnished by him to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of his knowledge, and, as he verily believes, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

DAVID NYE,
General Superintendent.

Subscribed and sworn to before me, this twenty-fourth day of March, 1882.

EDWARD CHATTIN,
Notary Public.

OAKLAND TOWNSHIP RAILROAD COMPANY.

No report made by this company for the year ending December 31, 1881. The road is operated by the South Pacific Coast Railroad Company, and the operations of the same for the year are included in the report of said company.

SAN LUIS OBISPO AND SANTA MARIA VALLEY RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

John Rosenfeld, President ..... San Francisco.
Charles Goodall, Vice-President and Managing Director ..... San Francisco.
W. H. Knight, Secretary and Treasurer ..... San Francisco.

NAMES OF DIRECTORS:

John Rosenfeld ..... San Francisco.
Charles Goodall ..... San Francisco.
Peter Donahue ..... San Francisco.
F. S. Wensinger ..... San Francisco.
Edwin Goodall ..... San Francisco.
John Harford ..... San Luis Obispo.
W. H. Knight ..... Oakland.

BUSINESS ADDRESS OF THE COMPANY:

No. 10 Market Street ..... San Francisco, California.

The San Luis Obispo and Santa Maria Valley Railroad Company was incorporated April 22, 1875.

ROLLING STOCK.

1. Capital stock authorized by charter		$500,000 00
2. Capital stock authorized by votes of company		500,000 00
3. Capital stock issued; amount paid in		132,370 00
5. Total amount paid in as per books of the company		132,370 00
6. Amount of capital stock issued but not full paid		2,831 07
7. Amount per share still due thereon		Various.
8. Par value of shares issued		500 00
9. Total number of stockholders	21	
10. Number of stockholders in California	21	
11. Amount of stock held in California		132,370 00

DEBT.

12. Funded debt as follows:		
Bonds		$120,000 00
Interest paid on same during the year	$8,600 00	
Certificates of indebtedness, $55,155 47 and $140,258 68	195,414 05	
Interest paid on same during the year	4,607 16	
13. Total amount of funded debt		$120,000 00
14. Unfunded debt:		
Incurred for construction, equipment, or purchase of property	$195,414 05	
All other debts, current credit balances, etc.	2,494 73	
		$197,908 78
15. Total amount of unfunded debt		197,908 78
16. Total gross debt liabilities		$197,908 78
17. Amount of cash, materials, and supplies on hand, sinking funds in hands of trustees, and such securities and debt balances as represent cash assets:		
Materials and debt balances		$1,966 32
Other securities and debt balances		847 71
Bills receivable		1,956 07
18. Total net debt liabilities		$4,770 10

COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry	$89,342 21
2. Bridging and trestlework	28,330 54
3. Superstructure, including rails	198,984 72
4. Land	10,390 80
Fences	4,767 96
5. Railroad wharf and approach	17,143 37
6. Engine houses, car sheds, turn tables, and passenger and freight stations	13,006 67
8. Interest	19,264 92
9. Engineering	18,917 75
Agencies, salaries, and other expenses during construction	7,318 49
Water service and telephone	1,133 81
11. Total cost of construction	$408,601 26

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Equipment.

	No.	Cost.
12. Locomotives	2	$16,310 74
16. Passenger cars	1	3,000 00
17. Freight cars	60	27,118 34
Other cars	8	951 76
Trucks	------	32 50
18. Total for equipment	------	$47,413 34

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

Port Harford property, including right of way, road bed, and old franchise of San Luis Railroad	$30,021 60
26. Total for property purchased, etc.	30,021 60
27. Whole amount of permanent investments	456,014 60
28. Property in California	$486,036 20
29. Amount of supplies and materials on hand	1,966 32
30. Cash and cash assets	3,678 78
31. Total property and assets of the company	$491,681 30

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry	$45,769 20
2. Bridging	10,243 39
3. Superstructure, including rails	99,789 37
4. Land	8,979 55
Fences	3,137 26
Water service	678 46
6. Engine houses, car sheds, and turn-tables	632 05
7. Telephone	455 35
8. Engineering, agencies, salaries, and other expenses during construction	5,196 31
General expenses	512 00
14. Freight and other cars [Number, 30]	12,938 05
18. Total	$188,345 69
20. Net addition to property account for the year	$188,345 69

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$3,386 15
7. Total earnings from passenger department	3,386 15
8. Derived from local freight on roads operated by this company	34,963 82
12. Total earnings from freight department	34,963 82
14. Total transportation earnings	$38,349 97
17. Income derived from rent of property, other than road and equipment:	
Railroad wharf:	
Wharfage, dockage, and commissions attending Pacific Coast Steamship Company	21,219 81
Storage	365 10
Sundries	9 49
18. Income derived from all other sources (including accretions from sinking funds, investments in stock, bonds, steamboat property, transportation lines, etc.):	
Surrendered stock:	
In 1877 the company sold some stock to be made in payments of long time—six, eight, twelve, eighteen, and twenty-four months. Partial payments were made, and subsequently the parties surrendered the stock	1,625 00
19. Total income derived from all sources	$61,569 27

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$2,037 43
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
General expenses	400 99
Telephone	344 93
3. Insurance premiums and losses by fire, and damages by fires set by engines	207 75
5. Total	$2,991 10

NOTE.—This road is short; from landings to San Luis Obispo about 10½ miles. Trains run irregular, depending upon the number of steamers arriving and departing from Port Harford. Passenger and freight trains are mixed, one locomotive, conductor, brakeman, etc., for all. Only two stations beside terminus at wharf. Oil and waste, etc.; for freight and passenger trains; hence the difficulty of segregating passenger and freight traffic. Expenses of railroad wharf are charged to wharf, but the receipts and disbursements are entered into the operating expenses of road, thus it is impossible to estimate percentage of expenses to transportation earnings. Have kept the expenses under a few heads, as follows:
"Station Expenses," "Train Expenses," "Repairs to Railroad Wharf," "Repairs to Rolling Stock," "Repairs to Buildings and Stations," "Repairs to Track and Track Service," "Repairs to Bridges," "General Expenses," "Freight Receipts," "Passenger Receipts," "Port Harford Wharf," "Storage," "Rebate Account (on through freight,)" "Fuel Account"

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$1,296 47
5. Repairs of bridges	1,836 24
6. Repairs of buildings and fixtures (stations and turn-tables)	50 90
7. Repairs of and additions to machine shops and machinery	
8. Repairs of fences, road crossings, and signs:	
Included in repairs to track.	
10. Repairs of locomotives and rolling stock	2,617 00
14. Fuel for engines and cars:	
Wood, cost	1,743 49
15. Water and water stations:	
Included in train expenses.	
16. Fuel for stations and shops:	
Included in station expenses.	
17. Oil and waste:	
Included in train expenses.	
18. Switchmen, watchmen, flag, and signalmen:	
Included in station expenses.	
Railroad wharf:	
Salary of agent, laborers, light, fuel, sundries	$4,885 97
Repairs to railroad wharf:	
Piles, lumber, labor, etc.	3,981 45
Train expenses:	
Pay-roll, engineer, conductor, brakeman, oil and waste, etc.	5,367 50
Station expenses:	
Salaries of agents, laborers, printing, light	6,909 17
Salary of Secretary	300 00
Rebate account:	
Rebate on through freight with P. C. S. S. Co.	1,222 31
Repairs to rolling stock (No. 10) includes locomotives, freight, and passenger cars.	
Repairs to buildings (No. 6) includes stations, turn-tables, and windmills, water tanks, etc.	
	$22,666 40

Class IV—Freight traffic expenses.

Rent of People's wharf	297 10
Expenses account:	
Surrendered stock	150 00
Sundries	4 50
13. Total expenses	48,453 61

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NET INCOME, DIVIDENDS, ETC.

1. Total net income	$61,569 31
5. Amount credited construction, profit and loss for year, from 1877 to date	29,760 71
7. Balance for the year (surplus)	11,641 81
8. Deduct or add entries made in profit and loss account during the year, not included in the foregoing statement	28,286 76
10. Total surplus December 31, 1881	11,641 81

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$408,601 26
Cost of equipment	47,413 34
Other investments	30,021 60
Supplies and materials on hand	1,966 32
Cash, cash assets, and other items:	
Balance in hands of agents	847 71
Bills receivable	2,831 07
Total	$491,681 30

Credits.

Capital stock	$132,370 00
Funded debt	120,000 00
Other debts:	
Due P. C. S. S. Co., account current construction account	195,414 05
Current balances for supplies	2,494 73
Amount profit and loss from the year 1877 to 1881, credited in construction	28,286 76
Amount of net balance on surrendered stock upon which partial payments had been made, credited in construction	1,473 95
Profit and loss (profit)	11,641 81
Total	$490,681 30

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Railroad wharf		$21,219 81
Freight receipts		34,963 82
Passenger traffic		3,386 15
Storage		365 10
Surrendered stock		1,625 00
Sundries		9 49
Railroad wharf	$4,885 97	
People's wharf (lease)	297 10	
Station expenses	6,909 17	
Fuel account	1,743 49	
Train expenses	5,367 50	
Rebate account	1,222 31	
Taxes	2,037 43	
General expense	953 67	
San Francisco office	300 00	
Repairs to buildings	50 90	
Repairs to rolling stock	2,617 41	
Repairs to Port Harford wharf	3,981 45	
Repairs to track and track service	6,296 47	
Repairs to bridges	1,836 24	
Interest	9,800 00	
Expense account, surrendered stock, etc.	154 50	
Amount credited on construction	1,473 95	
Profit and loss	11,641 81	
Totals	$61,569 37	$61,569 37

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Avila to Castro	February 1, 1876.
From Castro to San Luis Obispo	August 16, 1876.
From Port Harford to Avila	December 1, 1876.
From San Luis Obispo to Arroyo Grande	October 16, 1881.
2. Length of main line of road from Port Harford to Arroyo Grande	26 miles.
Length of main line in California	All.
3. Length of line with track laid, if road is not completed } 10. Total length of road belonging to this company	About complete.
14. Same in California	All.
16. Number of spans of bridges of twenty-five feet and upwards, in California	3

ROLLING STOCK.

	No.	Average Weight.	Market Value.
1. Locomotives	2	30,000	$8,000
Average weight of engines in working order		32,000	
Maximum weight of engines in working order [46,000]			
2. Average joint weight of engines and tenders		30,000	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [36 feet]			
4. Total length of heaviest engine and tender over all [43 feet]			

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	13,414
2. Rate of speed of express passenger trains, including stops	15
3. Rate of speed of accommodation trains, including stops	15
4. Miles run by freight trains	67,076
5. Rate of speed of express freight trains, including stops	15
6. Rate of speed of accommodation freight trains, including stops	15
8. Total train miles run	80,490
9. Total number of passengers carried	3,920
12. Number of tons freight carried (not including gravel)	19,698 19/100

MILEAGE REPORT, YEAR 1881.

Engines	13,425 miles.
Passenger cars	5,364 miles.
Loaded cars	39,709 miles.
Empty cars	21,992 miles.
	80,490 miles.

PASSENGER REPORT, YEAR 1881.

3,446 through tickets	$2,986 60
474 way tickets	313 80
15. Highest rate of fare per mile for any distance (excluding one mile)	8 cents.
16. Lowest rate of fare per mile for any distance (single fare)	7 cents.
17. Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	7½ cents.
20. Average rate of fare per mile for all passengers	7½ cents.
21. Highest rate of freight per ton per mile for any distance	30 cents.
22. Lowest rate of freight per ton per mile for any distance	15 cents.

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12. TABLE A. FUNDED DEBT.

To include all Bonds payable by the Company, except United States Government Bonds.

Character of—	Series.	Date.	Due.	Interest.	
				Rate.	Payable.
First mortgage	B	Sept., 1879	Sept., 1881	8	Quarterly.

TABLE A—Continued.

Authorized Amount.	Total Issued.	Accrued Interest.		Amount of Bonds Outstanding December 31, 1881.
	To Dec. 31, 1881.	To Dec. 31, 1881.	Overdue.	
$120,000 00	$120,000 00	$120,000 00	$120,000 00	$120,000 00

TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

Length of Track, December 31, 1881.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.

			Single.		Length of Roadway—Single and Double Track.			Reduced to Single Track.				Track and Sidings.		
								Track.			Sidings.			
Main Line and Branches.	From—	To—	Iron.	Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Steel.	Iron and Steel.	Iron.	Iron.	Steel.	Iron and Steel.
Main line within State.	Pt. Harford	San Luis Obispo	10.67	------	10.67	------	------	10.67	------	10.67	1.03	(b) 11.70	(c) ------	11.70
	San Luis Obispo	Arroyo Grande	10.280	6.720	------	------	------	------	------	------	------	------	------	------
Total on whole road, December 31, 1881			20	6½	26½	6½	26½	20	26½	26½	28	26½	6½	26½

Total constructed during year ---------- 16½
Total within the State constructed during year ---------- 16½

The length of rail is double the length of single track, columns (b) and (c) above.

	Within the State—December 31, 1881.		
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rail	20	65	1,305
Length of steel rail	12⅞	65	403

Total length of iron rail laid during the year ---------- 10 miles.
Total length of steel rail laid during the year ---------- 6½ miles.

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STATE OF CALIFORNIA,
County of San Luis Obispo. } ss.

John Rosenfeld, President of the San Luis Obispo and Santa Maria Valley Railroad Company, and W. H. Knight, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

JOHN ROSENFELD.
W. H. KNIGHT.

Subscribed and sworn to before me, this thirteenth day of May, 1882.

L. MEININGER,
Notary Public.

NOTICE.

SAN FRANCISCO, October 11, 1882.

W. R. ANDRUS, *Secretary of the Board of Railroad Commissioners of the State of California:*

DEAR SIR: As Secretary of the Pacific Coast Railway Company I hereby file with the Board of Railroad Commissioners of the State of California the notice of the consolidation of the San Luis Obispo and Santa Maria Valley Railroad Company into the Pacific Coast Railway Company, and at the time of the Resolution, Number Thirty-five, of your Board, the aforesaid railroad company had no corporate existence, and does not transport any passengers.

W. H. KNIGHT,
Secretary Pacific Coast Railway Company.

SAN LUIS OBISPO AND SANTA MARIA VALLEY RAILROAD COMPANY, AND PACIFIC COAST RAILROAD COMPANY.

Notice is hereby given that pursuant to section four hundred and seventy-three of the Civil Code and the laws of California, the San Luis Obispo and Santa Maria Valley Railroad Company and the Pacific Coast Railroad Company, two railroad corporations, having consolidated their capital stock, debts, property, assets, and franchises, upon the written consent of the holders of more than three fourths in value of all the stock of each of said corporations, and in a manner agreed upon by the respective Boards of Directors of said companies; and that such consolidated company is the Pacific Coast Railway Company.

Dated San Francisco, the twenty-fifth day of September, 1882.

W. H. KNIGHT,
Secretary of the San Luis Obispo and Santa Maria Valley Railroad Company.

W. H. KNIGHT,
Secretary of the Pacific Coast Railroad Company.

W. H. KNIGHT,
Secretary of the Pacific Coast Railway Company.

SAN RAFAEL AND SAN QUENTIN RAILROAD COMPANY.

No report made by this company for the year ending December 31, 1881. The road is operated by the North Pacific Coast Railroad Company, and the operations of the same for the year are included in the report of said company.

SANTA CRUZ RAILROAD COMPANY.

This road came into possession of officers in May last, and has since been sold under foreclosure proceedings. Pending these changes and the time for redemption, no detailed account of the business has been kept, and the office records, as far as can be ascertained, do not give much of the information asked for within.

J. L. WILLCUTT, Secretary.

SANTA CRUZ AND FELTON RAILROAD COMPANY.

No report made by this company for the year ending December 31, 1881. The road is operated by the South Pacific Coast Railroad Company, and the operations of the same for the year are included in the report of said company.

SONOMA VALLEY RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS AND DIRECTORS:

Col. Peter Donahue, President	San Francisco.
James M. Donahue, Vice-President	San Francisco.
R. H. Lloyd, Treasurer	San Francisco.
Thomas W. Johnson, Secretary	San Francisco.
Arthur Hughes	San Francisco.
Thomas Donahue	San Francisco.

BUSINESS ADDRESS OF THE COMPANY:

No. 426 Montgomery Street, San Francisco ..... California.

The Sonoma Valley Railroad Company was incorporated July 24, 1878.

CAPITAL STOCK.

1.	Capital stock authorized by charter	$200,000 00
2.	Capital stock authorized by votes of company	200,000 00
3.	Capital stock issued [number of shares, 2,000]; amount paid in	200,000 00
8.	Par value of shares issued	100 00
9.	Total number of stockholders 7	
10.	Number of stockholders in California 7	
11.	Amount of stock held in California	200,000 00

DEBT.

14.	Unfunded debt:	
	All other debts, current credit balances, etc., unpaid bills, pay-roll, etc.	$5,968 63
17.	Amount of cash, materials, and supplies on hand, sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:	
	Materials and supplies on hand	160 00
	Other securities and debt balances, station agents	353 75
18.	Total net debt liabilities	353 75

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COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry		
2. Bridging		
3. Superstructure, including rails	Construction	$142,459 70
4. Land	Construction S. and S. R. R. R.	288 91
Land damages		
Fences		
5. Passenger and freight stations		5,000 00
6. Engine houses, car sheds and turn-tables		
7. Machine shops and track tools		750 00
11. Total cost of construction		$148,498 61

Equipment.

	No.	Cost.
12. Locomotives	3	
14. Parlor cars		
15. Sleeping cars		
16. Passenger cars		
Mail cars		$23,020 00
Baggage cars		
17. Freight cars		
Other cars		
18. Total for equipment		$38,520 00

PROPERTY PURCHASED AND ON HAND NOT INCLUDED IN THE FOREGOING ACCOUNTS.

26. Total property purchased, etc.	$187,318 61
28. Property in California	$187,318 61
29. Amount of supplies and materials on hand	160 00
30. Cash assets	353 75
31. Total property and assets of the company	$187,832 36

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

No statistics of this.

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$21,168 45
7. Total earnings from passenger department	27,306 98
14. Total transportation earnings	$48,475 43
15. Earnings per mile of road operated	No answer.
16. Earnings per train mile	No answer.
19. Total income derived from all sources	$48,475 43

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local	$1,130 89
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV:	
Superintendent's expenses	765 00
Steamer	27,219 03
Office	3,052 27
Advertising	181 50
Repairs and expenses of wharf	801 40
Miscellaneous expenses	125 37
Legal expenses	32 20
	337 23
5. Total	$33,644 99

6. Proportion belonging to passenger department	No statistics.
7. Proportion belonging to freight department	No statistics.

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$11,024 55
5. Repairs of bridges	85 25
6. Repairs of buildings and fixtures (stations and turn-tables)	52 10
7. Repairs of tools	15 21
10. Repairs of locomotives, salaries, and running expenses	3,532 12
Number of tons of coal; cost	1,952 00
19. Total	$16,667 29
20. Proportion of same to passenger department	No statistics.

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, baggage, and freight cars	$1,292 80
4. Salaries, wages, and incidentals of passenger and freight trains	1,384 45
5. Salaries, wages, and incidentals of passenger and freight stations	3,385 19
8. Total	$6,062 44

Class IV—Freight traffic expenses.

3. Damages and gratuities, freight	$136 25
8. Total	$136 25
9. Total expenses of operating the road embraced in Classes I, II, III, and IV	$56,504 97
11. Percentage of expenses to total transportation earnings [116.56]	

NET INCOME, DIVIDENDS, ETC.

1. Total net income	$48,475 43
2. Percentage of same to capital stock and net debt	$23\frac{53}{100}$
3. Percentage of same to total property and assets	$23\frac{34}{100}$
10. Total deficit, December 31, 1881	$18,136 27

EARNINGS, EXPENSES, NET EARNINGS, ETC., OF PASSENGER DEPARTMENT.

We do not keep this account separate.

RECEIPTS, EXPENSES, NET EARNINGS, ETC., OF FREIGHT DEPARTMENT.

We do not keep this account separate.

GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.

Cost of road	$142,459 70
Cost of equipment	44,570 00
Cash, cash assets, and other items	802 66
Profit and loss (loss)	18,136 27
Total	$205,968 63

Credits.

Capital stock	$200,000 00
Other debts:	
Unpaid bills and payroll	5,968 63
Total	$205,968 63

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PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
Freight receipts		$27,306 98
Passenger receipts		21,168 45
		$48,475 43
Superintendent's expenses	$765 00	
Station service	3,385 19	
Train service	1,384 45	
Steamer expenses	27,219 03	
Locomotive expenses	1,952 00	
Office expenses	3,052 27	
Stationery and printing	181 50	
Advertising	801 40	
Repair of tools	15 27	
Repair of track	11,024 55	
Repair of buildings	52 10	
Repair of engines	3,532 12	
Repair of cars	1,292 80	
Repair of bridges and culverts	85 25	
Miscellaneous expenses	136 20	
Loss and damages	125 37	
Wharf expenses and repairs	1,130 89	
Taxes	337 33	
		$56,504 97
Net loss		$8,029 54

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use: From Sonoma Landing to Sonoma City	May 22, 1880.
2. Length of main line of road from Sonoma Landing to Sonoma City	15 miles.
Length of main line in California	15 miles.
10. Total length of road belonging to this company	15 miles.
11. Aggregate length of siding and other tracks not enumerated above	1 mile.
12. Same in California	1 mile.
13. Aggregate length of track belonging to this company computed as single track	16 miles.
14. Same in California	16 miles.
16. Number of spans of bridges of twenty-five feet and upwards, in California	3
18. Number of wooden bridges (aggregate length, 4,724 feet) in California	31
19. Number of crossings of highways at grade, in California	8
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	8

ROLLING STOCK.

	No.	Average Weight.
1. Locomotives	3	
Average weight of engines in working order		3,400
Maximum weight of engines in working order [42,000]		
2. Tenders	3	
Average weight of tenders full of fuel and water		2,500
Maximum weight of tenders full of fuel and water [2,900]		
Average joint weight of engines and tenders		59,000
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [34 feet]		
4. Total length of heaviest engine and tender over all [40 feet]		
6. Passenger cars	4	
Average weight		30,000
Maximum weight [30,000]		
8. Eight-wheel box freight cars	2	
10. Eight-wheel platform cars	24	

14. Total number of freight cars, including coal, etc., on a basis of eight wheels	26
15. Number of locomotives equipped with train brakes—kind of brake: Westinghouse	2
17. Number of passenger cars with Miller platform and buffer	4

MILEAGE, TRAFFIC, ETC.

1. Miles run by passenger trains	10,935
2. Rate of speed of express passenger trains, including stops	20
6. Rate of speed of accommodation freight trains, including stops	10
7. Miles run by other trains, and for what purpose: Gravel trains	2,582
9. Total number of passengers carried	26,425
Number of local passengers going north	13,008
Number of local passengers going south	13,417
10. Total passenger mileage, or passengers carried one mile	944,804
Average number of miles traveled by each local passenger, including steamer	$35\frac{3}{4}$
12. Number of tons freight carried (not including gravel)	10,202
13. Total freight mileage, or tons carried one mile	387,096
15. Highest rate of fare per mile for any distance (excluding one mile)	$7\frac{1}{2}$ cents.
16. Lowest rate of fare per mile for any distance (single fare)	$2\frac{63}{100}$ cents.
20. Average rate of fare per mile for all passengers	$2\frac{24}{100}$ cents.
21. Highest rate of freight per ton per mile for any distance	10 cents.
22. Lowest rate of freight per ton per mile for any distance	5 cents.
23. Average rate of local freight per ton per mile on roads operated by this company	$7\frac{5}{100}$ cents
25. Average rate of freight per ton per mile for all	$7\frac{5}{100}$ cents.
26. Average number of cars in passenger trains (including baggage cars)	3
27. Average number of cars in freight trains—basis of eight-wheel	7
28. Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	149,000 pounds.
29. Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	120,000 pounds.
30. Number of persons regularly employed by railroad company	25
Average pay of employés, other than officers	$52 22
Average monthly pay of engine drivers	100 00
Average monthly pay of passenger conductors	100 00
Average monthly pay of freight conductors	100 00
Average monthly pay of baggage masters	60 00
Average monthly pay of brakemen, flagmen, and switchmen	60 00
Average monthly pay of section men, as foremen	67 50
Average monthly pay of laborers	47 25

Relating to Passengers.

2. Passengers to San Francisco	12,400
3. Passengers from San Francisco	12,432

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.			Length of Track, December 31, 1881.					
			Single.	Length of Roadway—Single and Double Track.		Reduced to Single Track.		
						Track.	Sidings.	Track and Sidings.
Main Line and Branches.	From—	To—	Iron.	Iron.	Iron and Steel.	Iron.	Iron.	Iron.
Main line within State	Sonoma Landing	Sonoma City	15	15	15	15	1	(b) 16
Total on whole road, December 31, 1881			15	15	15	15	1	16

The length of rail is double the length of single track, column (b) above.	December 31, 1881—Within the State.					
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rail	32	27½	880	16	55	880

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

Peter Donahue, President of the Sonoma Valley Railroad Company, and Thomas W. Johnston, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing forty-three sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

P. DONAHUE.
THOMAS W. JOHNSTON.

Subscribed and sworn to before me, this fourth day of April, 1882.

WM. L. CAMPBELL,
Notary Public.

SOUTH PACIFIC COAST RAILROAD COMPANY.

NAMES AND RESIDENCES OF OFFICERS:

A. E. Davis, President ..... San Francisco.
A. E. Davis, Treasurer ..... San Francisco.
George H. Waggoner, Secretary ..... San Francisco.
A. H. Fracker, Superintendent ..... San Francisco.

NAMES OF DIRECTORS:

A. E. Davis ..... San Francisco.
Edward Barron ..... San Francisco.
Joseph Clark ..... San Francisco.
Daniel Cook ..... San Francisco.
Isaac E. James ..... Virginia City, Nevada.
John Rosenfeld ..... San Francisco.
Cary Peebles ..... Santa Clara, Cal.

BUSINESS ADDRESS OF THE COMPANY:

Office at Ferry Slip, foot of Market Street ..... San Francisco, California.

The South Pacific Coast Railroad Company was incorporated March 29, 1876, and not formed by consolidation with any companies.

CAPITAL STOCK.

1. Capital stock authorized by charter		$1,000,000 00
2. Capital stock authorized by votes of company		1,000,000 00
3. Capital stock issued [number of shares, 10,000]; amount paid in		1,000,000 00
8. Par value of shares issued		100 00
9. Total number of stockholders	7	
10. Number of stockholders in California	6	
16. Total gross debt liabilities		$3,018,437 80
17. Amount of cash, materials, and supplies on hand, sinking funds in hands of Trustees, and such securities and debt balances as represent cash assets:		
Cash on hand	$917 32	
Material and supplies on hand	31,888 83	
Other securities and debt balances	306,891 71	
		338,997 86
18. Total net debt liabilities		$2,679,439 94

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COST OF ROAD, EQUIPMENT, AND PROPERTY—ROAD AND BRANCHES.

Construction.

1. Grading and masonry		$384,190 76
2. Bridging		102,756 22
3. Superstructure, including rails		288,367 21
4. Land:		
Land damages and right of way		127,605 32
Fences		20,655 92
5. Passenger and freight stations		46,524 73
6. Engine houses, car sheds, and turn-tables		13,216 54
7. Machine shops, including machinery and tools		33,300 43
9. Engineering		51,015 60
Agencies, salaries, and other expenses during construction		186,607 41
Tunnels		418,566 77
11. Total cost of construction		$1,772,806 91

Equipment.

	No.	Cost.
12. Locomotives	12	$101,751 90
14. Parlor cars	2	9,970 02
16. Passenger cars	34	148,134 85
Baggage cars	7	13,300 00
17. Freight cars	305	143,084 36
Other cars and trucks	74	7,660 62
Steamers	3	463,685 43
18. Total for equipment		$887,587 18

PROPERTY PURCHASED.

27. Whole amount of permanent investments		$2,660,394 09
29. Amount of supplies and materials on hand		31,188 83
30. Cash and cash assets	$306,891 71 917 32	
		307,809 03
31. Total property and assets of the company		$2,999,391 95

EXPENDITURES CHARGED TO PROPERTY ACCOUNT DURING THE YEAR.

1. Grading and masonry		$4,195 61
2. Bridging		2,954 38
3. Superstructure, including rails		44,322 83
4. Land:		
Land damages (right of way)	$70,460 25	
Fences	254 13	
		70,714 38
5. Passenger and freight stations		2,187 22
6. Engine houses, car sheds, and turn-tables		1,925 94
8. Engineering, agencies, salaries, and other expenses during construction		9,558 25
Improvement steamers		2,617 75
9. Locomotives [2]		19,200 45
13. Passenger, mail, and baggage cars [12]		40,800 00
14. Freight and other cars [59]		23,381 94
18. Total		$221,858 55
19. Property sold and credited to property account during the year:		
Right of way	$920 00	
Individuals and corporations on account redistribution	64,731 63	
		65,651 63
20. Net addition to property account for the year		$156,296 92

REVENUE FOR THE YEAR.

1. Derived from local passengers on roads operated by this company	$255,529 16
5. Derived from express and extra baggage	3,233 92
6. Derived from mails	5,343 00
7. Total earnings from passenger department	$264,106 65
8. Derived from local freight on roads operated by this company	276,650 77
14. Total transportation earnings	$540,757 42
17. Income derived from rent of property, other than road and equipment.	3,949 50
18. Income derived from all other sources (including accretions from sinking funds, investments in stock, bonds, steamboat property, transportation lines, etc.):	
Wharfage	4,284 77
Flume	11,597 05
Telegraph	2,859 58
Miscellaneous	6,519 78
19. Total income derived from all sources	$569,968 10

EXPENSES FOR OPERATING THE ROAD FOR THE YEAR.

Class I—General traffic expenses.

1. Taxes, State and local		$11,181 68
2. General salaries, office expenses, and miscellaneous, not embraced in Classes III and IV		20,983 97
Advertising		6,769 50
Injuries to persons		49,877 65
Stationery and printing		3,937 25
Rents		18,315 00
Legal services		8,168 77
Repairs of tunnels		1,429 16
Repairs of machinery and tools		2,482 17
Wages and repairs to flume		18,313 64
4. Telegraph expenses	$1,425 29 1,285 31	
		2,710 60
5. Total		$144,169 39

Class II—Maintenance of way and buildings, and movement expenses.

1. Repairs of road (exclusive of bridges, new rails, and new ties)	$64,322 36
5. Repairs of bridges	8,848 60
6. Repairs of buildings and fixtures (stations and turn-tables)	1,602 43
8. Repairs of fences, road crossings, and signs	120 65
10. Repairs of locomotives	10,234 69
19. Total	$85,128 73

Class III—Passenger traffic expenses.

1. Repairs of passenger, mail, and baggage cars, and freight cars	$17,438 48
3. Damages and gratuities, passengers and freight	1,557 00
4. Salaries, wages, and incidentals of passenger trains	102,167 11
Salaries, wages, and incidentals of ferries	143,433 05
6. Salaries, wages, and incidentals of passenger stations	50,081 28
Total	$314,676 92

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GENERAL BALANCE SHEET AT CLOSING OF ACCOUNTS, DECEMBER 31, 1881.

Debits.		
Cost of road	$1,772,806 91	
Cost of equipment	887,587 18	
		$2,660,394 09
Supplies and materials on hand		31,188 83
Cash, cash assets, and other items		917 32
Sundry balances		306,891 71
Profit and loss (loss)		45,038 91
Total		$3,044,430 86
Credits.		
Capital stock		$1,000,000 00
Other debts due Treasurer		1,943,930 19
Sundry balances		74,507 61
Profit and loss (profit)		25,993 06
Total		$3,044,430 86

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDING DECEMBER 31, 1881.

	Debits.	Credits.
January 1, 1881	$40,038 91	
Revenue		$569,968 10
Expenditures	543,975 34	
Balance		19,045 85
	$589,013 95	$589,013 95

DESCRIPTION OF ROAD.

1. Date when the road or portions thereof were opened for public use:	
From Dumberton Point to Los Gatos	June 1, 1878.
From Dumbarton Point to Newark	Now abandoned.
From Los Gatos to Alma	Aug. 1, 1878.
From Alma to Wrights	May 1, 1879.
From Wrights to Junction at Felton	May 15, 1880.
2. Length of main line of road from Newark to junction at Felton	45.30 miles.
Length of main line in California	All.
11. Aggregate length of siding and other tracks not enumerated above	7.14 miles.
13. Aggregate length of track belonging to this company computed as single track	52.44 miles.
14. Same in California	All.
16. Number of spans of bridges of 25 feet and upwards, in California	11
18. Number of wooden bridges (aggregate length, 784 feet) in California	11
19. Number of crossings of highways at grade, in California	36
21. Number of crossings of highways under railroad, in California	2
26. Number of highway crossings at which there are neither electric signals, gates, nor flagmen, in California	38
27. Number of railroad crossings at grade:	
At Santa Clara, crossing the Southern Pacific Railroad	1

ROADS BELONGING TO OTHER COMPANIES, OPERATED BY THIS COMPANY BY LEASE OR CONTRACT.

30. *Names, Description, and Length of Each.*

Name of Company.	Termini. From—	Termini. To—	Length (Miles).	Dates of Lease.
Bay and Coast Railroad Company	Alameda Point	Newark	24.1	No terms agreed upon as yet.
Bay and Coast Railroad Company	Alameda Point	Center of bridge San Antonio Creek	1.1	
Oakland Township Railroad Company	Center of bridge San Antonio Creek	Fourteenth St., Oakland	.9	
Santa Cruz and Felton Railroad Co.	Junction at Felton	S. Cruz beach	5.9	

31. Total length of above roads	82.8
32. Total length of above roads in California	All.
34. Total miles of road operated by this company	82.8
35. Total miles of road operated by this company in California	All.
36. Number of stations on all roads operated by this company	37
37. Number of stations on all roads owned by this company	14
38. Same in California	All.
39. Miles of telegraph on line of road operated by this company	142¼
41. Number of telegraph offices in company stations	10
42. Number of telegraph stations operated by this company	23
43. Number of telegraph stations operated jointly by railroad and telegraph companies	23

ROLLING STOCK.

	Number.	Average Weight.	Market Value.
1. Locomotives	12	45,000	$101,751 90
Average weight of engines in working order		49,000	
2. Tenders	12	10,000	
Average weight of tenders full of fuel and water		23,000	
Average joint weight of engines and tenders		72,000	
3. Length of heaviest engine and tender, from center of forward truck wheel of engine to center of rear wheel of tender [40 feet]			
4. Total length of heaviest engine and tender over all [45 feet]			
6. Passenger cars	45	24,000	158,304 87
7. Mail and baggage cars	7	15,000	13,100 00
8. Eight-wheel box freight cars	70	10,000	37,554 30
10. Eight-wheel platform cars	235	8,000	105,530 06
11. Four-wheel platform cars—push	9	400	600 00
12. Other cars—hand	65	400	7,060 62

13. Total market value	$423,901 75
14. Total number of freight cars, including coal, etc., on a basis of eight wheels	305
15. Number of locomotives equipped with train brakes—kind of brake: Westinghouse air	12
16. Number of cars equipped with train brakes—kind of brake: Westinghouse air	43
17. Number of passenger cars with Miller platform and buffer	43

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MILEAGE, TRAFFIC, ETC.

1.	Miles run by passenger trains	209,184
2.	Rate of speed of express passenger trains, including stops	20
4.	Miles run by freight trains	102,468
5.	Rate of speed of express freight trains, including stops	12
6.	Rate of speed of accommodation freight trains, including stops	
7.	Miles run by other trains, and for what purpose:	
	Mixed	24,298
	Switching	57,830
	Work	27,464
		109,592
8.	Total train miles run	421,244
9.	Total number of passengers carried	896,659
	Number of through passengers going east (or north)	8,368
	Number of through passengers going west (or south)	7,767
	Number of local passengers going east (or north)	432,178
	Number of local passengers going west (or south)	448,346
10.	Total passenger mileage, or passengers carried one mile	12,450,900
11.	Passenger mileage to and from other roads:	
	Average number of miles traveled by each local passenger	12.56
	Average number of miles traveled by each through passenger	80
	Average number of miles traveled by each passenger, through and local-	13.88
12.	Number of tons freight carried (not including gravel):	
	Number of tons freight from other States, carried	
	Number of tons freight in this State, carried	172,045
	Number of tons freight produced in this State, carried	
13.	Total freight mileage, or tons carried one mile	5,981.526
15.	Highest rate of fare per mile for any distance (excluding one mile)	$.7\frac{20}{100}$
16.	Lowest rate of fare per mile for any distance (single fare)	$.0\frac{50}{100}$
17.	Average rate of fare per mile (not including season tickets) received from local passengers on roads operated by this company	$.2\frac{43}{100}$
	Average rate of fair per mile received from local passengers on roads operated by this company, not including ferry or season tickets	$.3\frac{30}{100}$
19.	Average rate of fare per mile for season ticket passengers, reckoning one round trip per day to each ticket	$.0\frac{63}{100}$
20.	Average rate of fare per mile for all passengers	$.2\frac{5}{100}$
21.	Highest rate of freight per ton per mile for any distance	15 cents.
22.	Lowest rate of freight per ton per mile for any distance	3 cents.
23.	Average rate of local freight per ton per mile on roads operated by this company	8 cents.
25.	Average rate of freight per ton per mile for all	8 cents.
26.	Average number of cars in passenger trains (including baggage cars)	5
27.	Average number of cars in freight trains—basis of eight-wheel	25
28.	Average weight of passenger trains, including locomotive and tender, in working order (exclusive of passengers)	78 tons.
29.	Average weight of freight trains, including locomotive and tender, in working order (exclusive of freight)	140 tons.
30.	Number of persons regularly employed by company, including officers	360
	Average monthly pay of employes, other than officers	$100 00
	Average pay of engine drivers	4 00 per day.
	Average monthly pay of passenger conductors	100 00
	Average monthly pay of freight conductors	85 00
	Average monthly pay of baggage masters	65 00
	Average monthly pay of brakemen, flagmen, and switchmen	60 00
	Average pay of section men	1 70 per day.
	Average pay of mechanics in shops	3 25 per day.
	Average pay of laborers	1 70 per day.

Relating to Passengers.

1.	Total season ticket passengers (round trip)	141,594
2.	Passengers to San Francisco (including season)	379,820
3.	Passengers from San Francisco (including season)	414,527
4.	Season ticket passengers to and from San Francisco (one round trip daily)	141,567

LIST OF ACCIDENTS IN CALIFORNIA.

	From causes beyond their own control—in California.	From their own misconduct or carelessness—in California.		Total—in California.	
	Injured.	Killed.	Injured.	Killed.	Injured.
Passengers	1		5		6
Employés	2	2	2	2	4
Others		2	3	2	3
Totals	3	4	10	4	13

STATEMENT OF EACH ACCIDENT IN CALIFORNIA.

January 12—August Hodgkiss, fireman, employé, hip injured slightly, near tunnel No. 6. Cause: jumped from the engine and fell down bank. Engine was pulling large stump off track, tipped over, Hodgkiss jumped to save himself.

February 14—Frank Deluchio, Italian laborer, killed near Santa Cruz by falling off construction train between cars. Was either asleep, or fell in a fit.

April 11—David Fulton, brakeman, thumb mashed near Glenwood. Coupling cars, the cause.

April 18—Alfred Ellery, boy, killed by train No. 28 running over him at Martin Street, Alameda. He was jumping on and off train while in motion, and fell between cars; his own carelessness the cause.

April 26—Augustus Anderson, second officer steamer Garden City, leg bruised on steamer, by freight cars on boat uncoupling.

April 21—John Doe (true name unknown), killed by train No. 25, near Newark. Placed his head on rail ahead of approaching train. Supposed to be a case of suicide.

May 1—Lucien Gubert, passenger on excursion train; fell from train in Alma, and was injured about the head. His own carelessness the cause.

June 23—John Thompson, passenger, undertook to get off at Pacific Avenue, Alameda, before the train stopped; fell and cut his head. He was himself to blame.

July 8—A. G. Paul; shoulder blade dislocated; just south of San José; driving wagon across track; struck by train. He was himself to blame.

July 9—James Merdith, passenger (soldier); hip and knee hurt at Los Gatos; tried to get on train after it had started, and was dragged along the ground. No one to blame but himself.

August 1—Chris. Hardiz; right arm cut off and slightly injured about the head; lying on the track at Third Avenue, Alameda; run over by train number forty-four. Supposed to have been stupefied by liquor.

August 20 (about)—Mrs. Captain Wells sprained her ankle alighting from train at Alviso after it started. Ample time had been afforded in which to get off.

September 26—George Whitney, brakeman; injured at Alameda Point; received scalp wound by being struck by spout of water tank while on the top of car. No one to blame but himself, as he had been warned.

October 4—Carrie Alwood, forehead scratched while in passenger train, at High Street, Alameda. Cars were brought to a sudden standstill by bumping up against others, and windows slightly broken.

October 24—William H. Whitney, brakeman; killed at Alameda Point. Attempted to get on train, slipped, and fell under cars. His own carelessness the cause.

December 17—Walter Holloway; thumb crushed at San José. Attempted to couple cars after having been driven away. His own fault; no one else to blame.

December 30—Mrs. Wald, an old lady, fell from top to bottom of steps, on steamer "Bay City," bruising her forehead and spraining her thumb. She alone was to blame.

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TABLE C. LENGTH IN MILES OF ROAD AND TRACKS (SINGLE AND DOUBLE) OWNED BY THE COMPANY.

State, separately, lengths within and without State. Reduce to single track by adding length of double track.

Main Line and Branches.	From—	To—	Length of Track, December 31, 1881.					
			Single.	Length of Road-way—Single and Double Track.	Reduced to Single Track.			
					Track.	Sidings.	Track and Sidings.	
			Iron.	Iron.	Iron.	Iron.	Iron.	
Main line within State	Newark	Junction at Felton	45.30	45.30	45.30	7.14	(b) 52.44	
Total on whole road, December 31, 1881			45.30	45.30	45.30	7.14	52.44	

The length of rail is double the length of single track, column (b) above.

	December 31, 1881—Within the State.		
	Length in Miles.	Average Weight per Mile (Tons).	Total Weight (Tons).
Length of iron rails	104.88	39.28	4,119.68

STATE OF CALIFORNIA,
City and County of San Francisco. } ss.

A. E. Davis, President of the South Pacific Coast Railroad Company, and George H. Waggoner, Secretary of the said company, being duly sworn, depose and say, that the statements, tables, and answers contained in the foregoing twenty-five (25) sheets, have been compiled and prepared by the proper officers of said company, from its books and records, under their direction and supervision; that they, the deponents, have carefully examined the same, and that as now furnished by them to the Board of Railroad Commissioners, they are, in all respects, just, correct, complete, and true, to the best of their knowledge, and, as they verily believe, the same contain a true and full exhibit of the condition and affairs of said company on the thirty-first day of December, 1881.

A. E. DAVIS.
GEO. H. WAGGONER.

Subscribed and sworn to before me, this twenty-seventh day of March, 1882.

EDWARD CHATTIN,
Notary Public.

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TABULATED STATEMENT COMPILED FROM THE ANNUAL REPORTS OF 1880 OF THE RAILROAD COMPANIES OF THE STATE OF CALIFORNIA.

TABLE A. CAPITAL STOCK.

	Broad Gauge Roads. (Gauge, 4 feet 8½ inches.)	Amount authorized by original Articles of Incorporation.	Amount authorized by vote of Company.	Amount paid in.	Par value of Shares.	Amount held in California.	Number of Shareholders.	
							In California.	Total.
1	Amador Branch Railroad Company	$675,000 00	$675,000 00	$675,000 00	$100 00	$648,000 00	10	11
2	Berkeley Branch Railroad Company	100,000 00	100,000 00	100,000 00	100 00	77,800 00	8	9
3	* Black Diamond Coal Mining Company							
4	California Northern Railroad Company	1,000,000 00	100,000 00	964,000 00	100 00	964,000 00	29	29
5	California Pacific Railroad Company	12,000,000 00	12,000,000 00	12,000,000 00	100 00	7,440,500 00	34	132
6	Central Pacific Railroad Company	100,000,000 00	100,000,000 00	59,275,500 00	100 00	25,544,500 00	46	411
7	Colusa and Chico Railroad Company	1,000,000 00	1,000,000 00	3,600 00	100 00	3,600 00	5	5
8	Los Angeles and Independence Railroad Company	4,000,000 00	4,000,000 00	502,500 00	100 00	502,000 00	8	9
9	Los Angeles and San Diego Railroad Company	5,600,000 00	5,600,000 00	570,500 00	100 00	569,800 00	6	7
10	Northern Railway Company	8,400,000 00	8,400,000 00	4,710,500 00	100 00	4,643,000 00	18	19
11	Pittsburg Railroad Company	50,000 00	225,000 00	225,000 00	100 00	32,000 00	3	52
12	Sacramento and Placerville Railroad Company	2,000,000 00	2,000,000 00	1,756,000 00	100 00	1,226,000 00	17	19
13	Salmon Creek Railroad Company	100,000 00	100,000 00	9,450 00	100 00			
14	San Francisco and North Pacific Railroad Company	12,340,000 00	5,000,000 00	3,750,000 00	100 00	3,750,000 00	5	5
15	San Pablo and Tulare Railroad Company	3,750,000 00	3,750,000 00	1,861,000 00	100 00	1,813,300 00	16	17
16	California Southern Railroad Company	4,400,000 00	4,400,000 00	2,088,000 00	100 00	27,800 00	11	325
17	Southern Pacific Railroad Company	30,000,000 00	90,000,000 00	36,477,000 00	100 00	31,313,950 00	23	31
18	Stockton and Copperopolis Railroad Company	7,000,000 00	7,000,000 00	234,500 00	100 00	205,200 00	12	14
19	Terminal Railway Company	4,000,000 00	4,000,000 00	27,500 00	100 00	20,700 00	8	9
20	Vaca Valley and Clear Lake Railroad Company	1,000,000 00	500,000 00	250,000 00	100 00	250,000 00	5	5
21	Visalia Railroad Company	100,000 00	100,000 00	82,025 00	100 00	100,000 00	164	164
	Totals for Broad Gauge Roads	$206,125,000 00	$248,960,000 00	$125,559,075 00		$78,862,550 00	429	1,273
	Narrow Gauge Roads. (Gauge, 3 feet.)							
1	Bay and Coast Railroad Company	$1,000,000 00		$100,000 00	$100 00	$100,000 00	5	5
2	Mendocino Railroad Company	150,000 00		96,154 00	100 00	All.	6	6
3	Monterey and Salinas Valley Railroad Company	300,000 00	$300,000 00	231,200 00	100 00	All.	28	28
4	Nevada County Narrow Gauge Railroad Company	400,000 00	400,000 00	242,200 00	100 00	242,850 00	149	149
5	North Pacific Coast Railroad Company	3,000,000 00	3,000,000 00	2,500,000 00	100 00	2,500,000 00	20	20
6	San Luis Obispo and Santa Maria Valley Railroad Company	500,000 00	500,000 00	149,000 00	500 00	149,000 00	35	35
7	Santa Cruz Railroad Company	1,000,000 00	1,000,000 00	201,555 19	100 00	201,555 19	92	92
8	Santa Cruz and Felton Railroad Company	500,000 00	176,662 00	176,662 00			33	33
9	Sonoma Valley Railroad Company	200,200 00	200,000 00	200,000 00	100 00	200,000 00	7	7
10	South Pacific Coast Railroad Company	1,000,000 00	1,000,000 00	1,000,000 00	100 00	All.	7	7
	Totals for Narrow Gauge Roads	$8,050,200 00	$4,876,771 19	$4,876,871 19		$4,700,109 19	382	382

* No capital stock.

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TABULATED STATEMENT COMPILED FROM THE ANNUAL REPORTS OF 1880 OF THE RAILROAD COMPANIES OF THE STATE OF CALIFORNIA.

TABLE A. CAPITAL STOCK.

	Broad Gauge Roads. (Gauge, 4 feet 8½ inches.)	Amount authorized by original Articles of Incorporation.	Amount authorized by vote of Company.	Amount paid in.	Par value of Shares.	Amount held in California.	Number of Shareholders.	
							In California.	Total.
1	Amador Branch Railroad Company	$675,000 00	$675,000 00	$675,000 00	$100 00	$648,000 00	10	11
2	Berkeley Branch Railroad Company	100,000 00	100,000 00	100,000 00	100 00	77,800 00	8	9
3	* Black Diamond Coal Mining Company							
4	California Northern Railroad Company	1,000,000 00	100,000 00	964,000 00	100 00	964,000 00	29	29
5	California Pacific Railroad Company	12,000,000 00	12,000,000 00	12,000,000 00	100 00	7,440,500 00	34	132
6	Central Pacific Railroad Company	100,000,000 00	100,000,000 00	59,275,500 00	100 00	25,544,500 00	46	411
7	Colusa and Chico Railroad Company	1,000,000 00	1,000,000 00	3,600 00	100 00	3,600 00	5	5
8	Los Angeles and Independence Railroad Company	4,000,000 00	4,000,000 00	502,500 00	100 00	502,000 00	8	9
9	Los Angeles and San Diego Railroad Company	5,600,000 00	5,600,000 00	570,500 00	100 00	569,800 00	6	7
10	Northern Railway Company	8,400,000 00	8,400,000 00	4,710,500 00	100 00	4,643,000 00	18	19
11	Pittsburg Railroad Company	50,000 00	225,000 00	225,000 00	100 00	32,000 00	3	52
12	Sacramento and Placerville Railroad Company	2,000,000 00	2,000,000 00	1,756,000 00	100 00	1,226,000 00	17	19
13	Salmon Creek Railroad Company	100,000 00	100,000 00	9,450 00	100 00			
14	San Francisco and North Pacific Railroad Company	12,340,000 00	5,000,000 00	3,750,000 00	100 00	3,750,000 00	5	5
15	San Pablo and Tulare Railroad Company	3,750,000 00	3,750,000 00	1,861,000 00	100 00	1,813,300 00	16	17
16	California Southern Railroad Company	4,400,000 00	4,400,000 00	2,088,000 00	100 00	27,800 00	11	325
17	Southern Pacific Railroad Company	30,000,000 00	90,000,000 00	36,477,000 00	100 00	31,313,950 00	23	31
18	Stockton and Copperopolis Railroad Company	7,000,000 00	7,000,000 00	234,500 00	100 00	205,200 00	12	14
19	Terminal Railway Company	4,000,000 00	4,000,000 00	27,500 00	100 00	20,700 00	8	9
20	Vaca Valley and Clear Lake Railroad Company	1,000,000 00	500,000 00	250,000 00	100 00	250,000 00	5	5
21	Visalia Railroad Company	100,000 00	100,000 00	82,025 00	100 00	100,000 00	164	164
	Totals for Broad Gauge Roads	$206,125,000 00	$248,960,000 00	$125,559,075 00		$78,862,550 00	429	1,273
	Narrow Gauge Roads. (Gauge, 3 feet.)							
1	Bay and Coast Railroad Company	$1,000,000 00		$100,000 00	$100 00	$100,000 00	5	5
2	Mendocino Railroad Company	150,000 00		96,154 00	100 00	All.	6	6
3	Monterey and Salinas Valley Railroad Company	300,000 00	$300,000 00	231,200 00	100 00	All.	28	28
4	Nevada County Narrow Gauge Railroad Company	400,000 00	400,000 00	242,200 00	100 00	242,850 00	149	149
5	North Pacific Coast Railroad Company	3,000,000 00	3,000,000 00	2,500,000 00	100 00	2,500,000 00	20	20
6	San Luis Obispo and Santa Maria Valley Railroad Company	500,000 00	500,000 00	149,000 00	500 00	149,000 00	35	35
7	Santa Cruz Railroad Company	1,000,000 00	1,000,000 00	201,555 19	100 00	201,555 19	92	92
8	Santa Cruz and Felton Railroad Company	500,000 00	176,662 00	176,662 00			33	33
9	Sonoma Valley Railroad Company	200,200 00	200,000 00	200,000 00	100 00	200,000 00	7	7
10	South Pacific Coast Railroad Company	1,000,000 00	1,000,000 00	1,000,000 00	100 00	All.	7	7
	Totals for Narrow Gauge Roads	$8,050,200 00	$4,876,771 19	$4,876,871 19		$4,700,109 19	382	382

* No capital stock.

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ads. (Gauge, 4 feet 8½ inches.)	Date of Incorporation.	From—	To—	Steamer.	Roadway.			Length in Miles.			Iron Rail.	
					Iron.	Steel.	Total.	Iron.	Steel.	Total.	Length (Miles).	Weight (Tons).
Company	July 3, 1875	Galt	Ione		27.2000		27.2000	3.0483		3.0483	60.4966	2,661.8504
Company	September 25, 1876	Shell Mound	Berrymans		0.8599	2.9764	3.8363	0.2435	0.2543	0.4978	2.2068	97.0992
ng Company	June 15, 1861	Black Diamond	Nortonville		6.0000		6.0000	0.4735		0.4735	12.9470	569.6680
oad Company	June 29, 1860	Oroville	Marysville		26.5000		26.5000	.5000		.5000	54.0000	2,435.7000
ad Company	December 28, 1881	San Diego				47.0000	47.0000	1.9100	3.4700	5.3800	3.8200	150.0000
Company	December 23, 1869											
		Vallejo	Sacramento		14.9526	45.4374	60.3900	15.6029		15.6029		
		Napa Junction	Calistoga		34.4312	0.0488	34.4800	3.1477		3.1477		
		Davisville	Knights Landing		18.6400		18.6400	3.7227		3.7227		
					68.0238	45.4862	113.5100	22.4733		22.4733	180.9942	7,239.7680
mpany	August 22, 1870											
State		State line	Terminus		371.1652	227.2048	598.3700	63.8322		63.8322		
nia—ferry		San Francisco	Oakland Wharf	3.6900								
nia—rail		Oakland Wharf	State line		39.9337	233 7732	273.7069	101.5893		101.5893		
		Roseville	Redding		140.7604	11.3405	152.1009	19.7016		19.7016		
		Lathrop	Goshen		111.1988	34.8808	146.0796	11.1204		11.1204		
		San José	Niles		12.3710	5.1653	17.5363	.9800		.9800		
		Oakland Wharf	Brooklyn			5.6598	5.6598	.0335		.0335		
		Oakland Point	Alameda Wharf, Melrose, Fruit Vale, Brooklyn		5.0724	5.9466	11.0190	.8647		.8647		
					680.5015	523.9710	1,204.4725	198.1217		198.1217	1,757.2464	
nia											887.2516	
Company	October 4, 1878											
ence Railroad Company	January 4, 1875	Santa Monica	Los Angeles		16.8300		16.8300	1.5433		1.5433	36.7466	1,443.6159
Railroad Company	October 10, 1876	Florence	Santa Ana		27.8200		27.8200	2.3900		2.3900	60.4200	2,658.4800
ny	January 24, 1880	Castroville	Monterey			15.1200	15.1200	1.4300		1.4300	2.8600	125.8300
y	July 19, 1871	Oakland	Martinez			35.7043	35.7043	11.7423		11.7423		
		Benicia	Suisun			16.3428	16.3428	4.1652		4.1652		
		Woodland	Willows		25.6174	39.1795	64.7969	6.4987		6.4987		
					25.6174	91.2266	116.8440	22.4062		22.4062	96.0472	4,226.0768
y	January 23, 1862	Pittsburg Landing	Somersville		5.3333		5.3333	0.5303		0.5303	11.7272	414.1490
e Railroad Company	April 19, 1879	Sacramento	Shingle Springs		42.7100	5.0000	47.7100	6.8100		6.8100	99.0400	4,357.7600
npany	April 9, 1875	Salmon Creek Wharf	Salmon Creek Mills		8.0000		8.0000				16.0000	4,708.0000
acific Railroad Company	June 29, 1877											
		San Francisco	Donahue	34.0000								
		Donahue	Cloverdale		54.5000	1.5000	56.0000					
ille branch		Fulton	Guerneville		16.0000		16.0000					
branch		San Rafael	Junction		20.0000	.5000	20.5000					
				34.0000	90.5000	2.0000	92.5000	7.5000		7.5000	181.0000	7,964.0000
road Company	July 19, 1871	Tracy	Martinez			46.5180	46.5180	9.8248		9.8248	19.6496	864.5824
Company	December 18, 1874											
		San Francisco	Tres Pinos and Soledad		111.7600	49.1300	160.8900	26.3700		26.3700		
		Huron	Goshen			40.0000	40.0000		1.6100	1.6100		
		Goshen	Mojave		96.8500	44.8100	141.6600	5.5800	4.4200	10.0000		
		Mojave	Los Angeles		20.5300	78.5900	99.1200	2.2800	3.3500	5.6300		
		Los Angeles	Colorado River		85.0400	162.5400	248.1800	4.4600	5.1300	9.5900		
		Los Angeles	Wilmington		26.0600		26.0600	2.6300		2.6300		
					336.8400	374.6700	715.9100	42.3200	14.5100	379.1600	758.3200	33,366.0800
Railroad Company	November 17, 1877											
		Stockton	Oakdale		32.6596		32.6596	2.9195		2.9195		
nch		Peters	Milton		11.9928		11.9928	.3547		.3547		
					44.6524		44.6524	3.2742		3.2742	95.8532	3,765.6600
y	January 30, 1867											
e Railroad Company	February 19, 1877	Elmira	Madison		29.0000		29.0000	2.0000		2.0000	62.0000	2,480.0000
	May 21, 1874	Visalia	Goshen		7.3333		7.3333	1.0000		1.0000	16.6666	
gauge roads				37.6900	1,443.7216	1,353.9684	2,601.0818	391.6313	18.0053	678.1614	2,658.0462	48,528.2997
n Roads. (Gauge, 3 feet.)												
mpany	May 2, 1877											
		San Francisco	Alameda Point	5.5000								
		Alameda Point	Newark		24.1000		24.1000	1.2500		1.2500	60.5000	2,376.5000
any	October 22, 1875	Cuffeys Cove	Helmke's Mill		4.0000		4.0000	.5000		.5000	9.0000	
auge Railroad Company	April 4, 1874	Colfax	Nevada City		22.6400		22.6400	1.4500		1.4500	47.9800	1,319.1058
ad Company	December 16, 1871											
		Saucelito	Duncan's Mills		74.2500			9.7500		9.7500		
		Junction	San Rafael		2.0000							
					76.2500			9.7500		9.7500	152.5000	6,481.0000

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TABULATED STATEMENT COMPILED FROM THE ANNUAL REPORTS OF 1880 OF THE RAILROAD COMPANIES OF THE STATE OF CALIFORNIA

TABLE C. LENGTH OF LINE OPERATED BY COMPANY.

GAUGE ROADS. (Gauge, 4 feet 8½ inches.)	Owned by Company.				Operated under Lease.				Total Line Operated.				REMARK
	Steamer. (Miles.)	Roadway.		Total Roadway and Steamer. (Miles.)	Steamer. (Miles.)	Roadway.		Total Roadway and Steamer. (Miles.)	Steamer. (Miles.)	Roadway.		Total Roadway and Steamer. (Miles.)	
		In Cal. (Miles.)	Out of Cal. (Miles.)			In Cal. (Miles.)	Out of Cal. (Miles.)			In Cal. (Miles.)	Out of Cal. (Miles.)		
h Railroad Company		27.2000		27.2000		All.				All.		27.2000	--Operated by Central Paci
ch Railroad Company		3.8363		3.8363		All.				All.		3.8363	--Operated by Central Paci
d Coal Mining Company		6.2500		6.2500		All.				All.		6.2500	
thern Railroad Company		26.5000		26.5000		All.				26.5000		26.5000	
fic Railroad Company		113.5100		113.5100		All.				113.5100		113.5100	--Operated by Central Paci
Railroad Company	3.6900	606.1025	598.3700	1,208.1825		426.54	1,010.7025	1,437.2425	3.6900	1,563.0600	903.9600	2,467.0200	
isa Railroad Company													
nd Independence Railroad Company		16.83		16.83						16.83		16.83	--Operated by Central Paci
nd San Diego Railroad Company		27.82		27.82						27.82		27.82	--Operated by Central Paci
way Company		139.2502		139.2502						139.2502		139.2502	--Operated by Central Paci
road Company		5½		5½						5½		5½	
d Placerville Railroad Company		47.7100		47.7100						47.7100		47.7100	
Railroad Company		8.		8.						8.		8.	
and North Pacific Railroad Company	34.0000	92.5000		126.5000					34.0000	92.5000		126.5000	
Tulare Railroad Company		46.5180		46.5180						All.		46.5180	--Operated by Central Paci
hern Railroad Company		47.000		47.000						All.		47.000	
ic Railroad Company		712.05		712.05						All.		712.05	
Copperopolis Railroad Company		44.6524		44.6524						All.		44.6524	--Operated by Central Paci
way Company													--This company has not com
nd Clear Lake Railroad Company		29.0000		29.0000						29.0000		29.0000	
d Company		7½		7½						7½		7½	
Broad Gauge Roads	37.6900	1,306.7360	698.3700	1,932.8160		426.5400	1,010.7025	1,437.2425	37.0900	2,162.5845	903.9600	3,191.8375	
RROW GAUGE ROADS. (Gauge, 3 feet.)													
Railroad Company		23.		23.						All.		23.	---- Operated by South Pac
ilroad Company		4.		4.						All.		4.	
Salinas Valley Railroad Company		18.56		18.56						All.		18.56	--Operated by Southern Paci
y Narrow Gauge Railroad Company		22.6400		22.6400						22.6400		22.6400	
Coast Railroad Company	11.5000	87.7500		99.2500		3½		3½	11.5000	87.7500		99.2500	
o and Santa Maria Valley Railroad Company		10.67		10.67						All.		10.67	
ilroad Company		21.1650		21.1650						21.1650		21.1650	--Operated by Southern Paci
d Felton Railroad Company		9.		9.						All.		9.	---- Operated by South Pac
y Railroad Company		15.		15.						All.		15.	--Operated by S. F. and N.
Coast Railroad Company	5.0000	49.6600		54.6600		$31\frac{2}{10}$		$31\frac{2}{10}$		49.6600		54.6600	
Narrow Gauge Roads	16.5000	259.4450		208.9450		34.7000		34.7000	11.5000	181.2150		277.9450	
ls for Broad and Narrow Gauge Roads	54.19	1,566.1810	598.3700	2,140.7610		460.2400	1,010.7025	1,471.9425	48.5900	2,343.7995	903.9600	3,469.7825	

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RULES

OF THE

Board of Railroad Commissioners of the State of California.

ADOPTED JUNE 7th, 1881.

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RULES OF THE BOARD OF RAILROAD COMMISSIONERS.

The Railroad Commissioners of the State of California hereby adopt the following rules to govern the exercise of the judicial power conferred upon the Commissioners by the State Constitution and the laws made in pursuance thereof:

Rule I.

Any person believing himself aggrieved by any railroad or other transportation company, in any particular, may file his complaint against such railroad or transportation company with the Secretary of the Commissioners. The Secretary must indorse on the complaint the day, month, and year that it is filed, and must, at the request of the person filing the same, issue a summons thereon.

Rule II.

The summons must be directed to the defendant, must be signed by the Secretary, and attested by the seal of the Commissioners, and must contain:

1. The names of the parties to the proceeding.
2. A statement of the nature of the complaint.
3. A direction that the defendant appear and answer it within fifteen days after service thereof.

Rule III.

The summons may be served by the Bailiff of the Commissioners, or by any citizen of the State, and shall be served by delivering a copy thereof, together with a copy of the complaint, to the defendant, or if the defendant is a corporation, to the President, Secretary, Treasurer, or Managing Agent thereof. Proof of service of summons and complaint must be as follows:

1. If made by the Bailiff, his certificate thereof.
2. If by any other person, his affidavit thereof.

Rule IV.

From the time of the service of the summons and copy of complaint the Commissioners shall be deemed to have acquired jurisdiction of the parties and subject-matter. The voluntary appearance of the defendant is equivalent to personal service.

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RULE V.

The complaint must contain:
1. The names of the parties to the proceeding.
2. A statement of the cause of complaint, in ordinary and concise language, giving such particulars of time, place, and circumstances as may enable the defendant to answer the same intelligently.
3. A demand of the relief claimed.

RULE VI.

The complainant may write several causes of complaint in the same complaint, but the causes so united must be separately stated.

RULE VII.

The defendant may, within the time required in the summons to answer, object to the complaint upon the following grounds:
1. That it does not state facts sufficient to authorize the proceedings.
2. That it contains more than one cause of action, and that such causes are not separately stated.
3. That it is ambiguous, uncertain, or unintelligible.

RULE VIII.

If the objection is sustained, the complainant may, within ten days thereafter, amend his complaint. If the objection is overruled, the defendant may, within ten days thereafter, answer the complaint.

RULE IX.

The answer of the defendant may contain:
1. A general or specific denial of the allegations of the complaint controverted by him.
2. A statement of any new matter of defense, or in mitigation, or explanation of the charges made in the complaint.

RULE X.

The complainant may, within ten days after the service of the answer, object to the same as insufficient, and if the objection is sustained the defendant may, within ten days thereafter, amend his answer.

RULE XI.

The complaint, answer, and demurrer must be subscribed by the party, or by some attorney at law in his behalf. If the complaint is verified, the answer must be verified in the same manner, by the persons, and in the form required by the Code of Civil Procedure in civil cases.

RULE XII.

The provisions of Sections 452, 453, 462, 463, 464, 465, 469, 470, 471, 472, 473, 475, and 476 of the Code of Civil Procedure shall be applicable to pleadings before these Commissioners.

RULE XIII.

If the defendant fails to appear and answer the complaint, the Commissioners shall render such decision thereon, within the relief demanded in the complaint, as the facts may warrant.

RULE XIV.

The Secretary of the Commissioners must keep a calendar of the proceedings at issue, according to the date of service of the summons; and Sections 594, 595, and 596 of the Code of Civil Procedure shall be applicable to the proceedings to be had after said proceedings are entered on the calendar.

RULE XV.

Any party to such proceeding, feeling aggrieved at the decision of the Commissioners, may, within sixty days after such decision, apply to the Commissioners for a rehearing; such application shall be in writing, and shall be filed with the Secretary. The application may be made upon any or all of the following grounds:
1. Irregularity in the proceedings or abuse of discretion, by which the party was prevented from having a fair rehearing.
2. Accident or surprise which ordinary prudence could not have guarded against.
3. Newly discovered evidence, material for the party making the application, which could not with reasonable diligence have been discovered and produced at the trial.
4. Insufficiency of evidence to justify the decision, or that it is against law.
5. Error of law occurring on the trial. Sections 658, 659, and 660 of the Code of Civil Procedure, shall be applicable to such rehearings.

RULE XVI.

Sections 668, 669, and 670 of the Code of Civil Procedure shall be applicable to the entry of the decisions of these Commissioners.

RULE XVII.

The provisions of Part IV of the Code of Civil Procedure, relating to the general principles, kinds, and degrees, production, and effect of evidence, and of the rights and duties of witnesses, shall be applicable to proceedings before these Commissioners.

RULE XVIII.

The word "person" in these rules includes corporations and firms—the singular the plural, and the masculine the feminine and neuter genders.

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RULE XIX.

These rules may be amended at any regular meeting of the Commissioners, and amendments so made shall go into effect sixty days thereafter.

RULE XX.

These rules shall be in force from and after the first day of July, 1881.

J. S. CONE,
R. R. Com. First District.

C. J. BEERSTECHER,
R. R. Com. Second District.

Adopted June 7, 1881.

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	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.
-------	375	300	20.00	------	250	------	275	225	18.18	------	------	------	850	395	53.53	710	390	45.07	690	335	51.45	580	300	48.28	587	275	53.15	493	240	51.30	700	600	14.28
-------	365	290	20.54	------	240	------	240	215	10.42	------	------	------	815	395	51.53	675	390	42.22	660	335	49.25	550	300	45.46	561	275	50.98	468	240	48.71	700	600	14.28
-------	365	280	23.29	------	230	------	240	205	14.60	------	------	------	815	395	51.53	675	390	42.22	660	335	49.25	550	300	45.46	561	275	50.98	468	240	48.71	700	600	14.28
-------	350	270	22.85	------	220	------	225	195	13.33	------	------	------	780	395	49.36	640	390	39.07	640	335	47.65	530	290	45.30	546	275	49.63	451	235	47.89	700	600	14.28
-------	340	270	20.59	------	220	------	215	195	9.31	------	------	------	750	395	47.33	610	390	36.07	610	335	45.08	500	280	44.00	519	275	47.01	425	225	47.05	650	600	8.33
-------	325	245	24.61	------	195	------	200	170	15.00	------	------	------	375	350	6.67	560	345	38.40	570	335	41.22	460	260	43.48	485	275	43.29	391	210	46.29	650	550	15.38
-------	325	240	26.15	------	190	------	200	165	17.50	------	------	------	675	350	48.15	535	340	36.45	560	325	41.97	450	250	44.44	476	270	43.27	383	200	47.77	650	520	20.00
-------	325	230	29.23	------	180	------	200	155	22.50	------	------	------	675	350	48.15	535	340	36.45	560	325	41.97	440	250	44.20	476	270	43.27	374	200	46.52	650	520	20.00
-------	325	230	29.23	------	180	------	200	155	22.50	------	------	------	650	340	47.70	510	320	37.25	550	320	41.80	430	240	44.19	468	265	43.37	366	195	46.72	650	500	23.07
-------	325	230	29.23	------	180	------	200	155	22.50	------	------	------	625	320	48.80	485	305	37.12	540	305	43.52	420	230	45.24	459	260	43.35	357	185	48.17	650	460	29.33
-------	325	230	29.23	------	180	------	200	155	22.50	------	------	------	600	320	46.66	460	285	38.03	530	300	43.40	400	220	45.00	451	255	43.45	340	175	48.52	650	449	32.30
-------	325	225	30.77	------	175	------	200	150	25.00	------	------	------	575	310	46.09	435	250	42.53	490	295	39.80	340	200	41.18	417	250	40.24	289	160	44.63	650	420	35.38
-------	325	225	30.77	------	175	------	200	150	25.00	------	------	------	325	300	7.70	375	250	33.33	430	290	32.56	280	180	35.72	366	235	35.79	238	145	39.91	650	400	38.46
-------	150	225	------	------	175	------	125	150	------	------	------	------	535	275	48.60	350	250	28.57	390	250	35.90	250	200	20.00	332	200	39.76	213	160	24.88	802	380	52.61
-------	225	225	------	------	175	------	200	150	25.00	------	------	------	525	275	47.62	330	250	24.24	370	250	32.43	230	180	21.74	315	200	36.50	196	145	26.02	767	380	50.45
-------	300	225	25.00	------	175	------	200	150	25.00	------	------	------	510	250	50.98	300	250	16.66	360	240	33.33	210	155	26.20	306	190	37.90	179	125	30.16	650	380	41.53
-------	325	220	31.69	------	170	------	175	130	25.71	------	------	------	510	250	50.98	250	210	16.00	340	230	32.33	190	135	28.99	289	185	36.00	162	110	32.09	750	380	49.33

rates on grain from points on the Oregon Division and the California Pacific Railroad, including Northern Railway, north of Woodland to South Vallejo, will be the same as to Benicia, excepting from points between Suisun and Benicia, and fr
riff rates are lower than to Benicia.
take Port Costa grain rates, provided: *First*—That general tariff rates are not lower. *Second*—That if the grain must pass Port Costa, en route to Benicia, the rate shall in no case be less than one dollar per ton.
eed, in carloads, the rates between all stations will be fifty per cent above the rates for grain, but never to exceed second class.

SOUTHERN PACIFIC RAILROAD—NORTHERN DIVISION.

ancisco	Grain and Flour. Car Lots, In cents per 2000 lbs.			Wool. Car Lots, In cents per 100 lbs.			Cattle and Hogs. Car Lots, In cents per 100 lbs.			Sheep. Car Lots, In cents per 100 lbs.			Hay. Car Lots, In cents per 2000 lbs.		
	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.
-------	500	450	10.00	36	32	11.11	22	18	18.18	16½	14½	12.12	530	400	26.44
-------	450	400	11.11	36	32	8.60	20½	17	17.07	15 5/6	13½	11.69	490	380	22.45
-------	400	350	12.50	33	30	9.09	19½	16	18.00	11 7/9	13	13.07	460	360	21.74
-------	325	325	------	28	27	3.57	17½	15	14.29	12 5/9	12	4.76	400	340	15.00
-------	300	300	------	23	23	------	16	14	12.50	12	11	8.33	380	320	15.79
-------	------	325	------	------	27	------	------	16	------	------	12½	------	------	360	------
-------	300	300	------	23	23	------	15	12½	16.67	11¼	10	11.11	350	300	14.03
-------	300	300	------	23	22	------	15	12½	16.67	11¼	10	11.11	350	300	14.03
-------	300	300	------	23	23	------	14½	12½	13.80	10 8/9	10	8.26	350	280	20.00
-------	300	300	------	23	23	------	13½	11	18.52	10 1/9	9	10.90	330	280	15.15
-------	300	300	------	19	18	5.26	12½	10	20.00	9 1/9	8	14.89	300	260	13.33
-------	350	325	7.14	24	24	------	15	12	25.00	11¼	9½	15.55	350	280	20.00
-------	400	375	6.25	27	27	------	16	12½	21.87	12	10	16.67	380	300	21.05
-------	300	300	------	18	18	------	11½	9½	17.39	8 6/9	7½	12.80	300	260	13.33
-------	300	290	3.33	16	16	------	10½	9½	9.52	7 5/9	7½	5.06	250	240	4.00
-------	300	270	10.00	16	16	------	10½	9½	9.52	7 5/9	7½	5.06	250	200	12.00
-------	300	250	16.67	16	16	------	10	9	10.00	7½	7	6.67	250	200	20.00
-------	300	225	25.00	15	15	------	9	9	------	6¾	6¾	------	200	180	10.00
-------	175	175	------	9	9	------	7½	7½	------	5 6/10	5 6/10	------	160	150	6.25
-------	175	150	14.28	9	9	------	7½	7½	------	5 6/10	5 6/10	------	160	150	6.25
-------	170	125	26.47	9	9	------	7	7	------	5¼	5¼	------	160	150	6.25
-------	125	100	20.00	8	8	------	6½	6½	------	5	5	------	150	150	------
-------	120	100	16.67	8	8	------	6	6	------	5	5	------	140	140	------
-------	120	100	16.67	7	7	------	6	6	------	5	5	------	140	140	------
-------	100	100	------	7	7	------	5	5	------	5	5	------	140	140	------
-------	100	100	------	7	7	------	5	5	------	5	5	------	140	120	14.28
-------	100	100	------	7	7	------	5	5	------	5	5	------	140	120	14.28
-------	100	100	------	7	7	------	5	5	------	5	5	------	130	120	7.69
-------	100	100	------	7	7	------	5	5	------	5	5	------	130	120	7.69
-------	100	100	------	7	7	------	5	5	------	5	5	------	120	120	------
-------	100	100	------	7	7	------	5	5	------	5	5	------	120	120	------
-------	100	100	------	6	6	------	5	5	------	5	5	------	100	100	------
-------	100	100	------	5	5	------	5	5	------	5	5	------	100	100	------
-------	70	70	------	3⅔	3⅔	------	3½	3½	------	3½	3½	------	70	70	------

REVISED FREIGHT TARIFF, TO GO INTO EFFECT JUNE 1, 1881.

To San Francisco From—	Hay, Car Lots, in cents per 2,000 pounds.
Soledad	400
Gonzales	380
Chualar	360
Salinas	340
Castroville	320
Monterey	360
Pajaro	300
Vega	300
Sand Cut	280
Sargent's	280
Gilroy	260
Hollister	280
Tres Pinos	300
Tennant	260
Madrone	240
Perry's	220
Coyote	200
Eden Vale	180
San José	150
Santa Clara	150
Lawrence's	150
Mountain View	150
Mayfield	140
Menlo Park	140
Redwood	140
Belmont	120
San Mateo	120
Oak Grove	120
Millbrae	120
San Bruno	120
Baden	120
Colma	100
San Miguel	100
Bernal	70

CENTRAL PACIFIC RAILROAD—VISALIA AND TULA

SPECIAL TARIFF FOR WOOD.

When loaded and unloaded by owner, and shipped in carlo
twenty thousand pounds nor more than thirty thousand pounds.
1, 1881.

Rates quoted are in cents per two thousand pounds, and are
governing the transportation of property published in General
1880.

From Goshen To—			
Cameron	450	314	30.22
Tehachapi	430	244	43.25
Girard	410	236	42.49
Keene	400	228	43.00
Bealville		220	
Caliente	380	212	44.21
Pampa	360	205	42.05
Sumner	330	200	39.39
Lerdo	300	190	36.66
Poso	260	180	30.76
Delano	220	160	27.27
Alila	180	140	22.22
Tipton	140	100	27.86
Tulare	110	70	36.36
Cross Creek	90	50	44.44
Kingsbury	110	90	18.18
Fowler	140	110	21.43
Fresno	180	140	22.22
Sycamore	220	160	27.27
Borden	260	180	30.77
Madera	260	190	26.92
Berenda	300	195	35.00
Minturn	330	200	39.39
Plainsburg	340	200	41.18
Merced	360	205	43.05
Atwater	380	212	42.11
Arena	380	220	42.11
Cressey	390	220	43.59
Turlock	410	236	42.44
Keyes	420	244	41.90
Ceres	430	248	42.33
Modesto	440	252	40.45
Salida	450	260	42.22
Ripon	460	264	42.61
Morrano	460	272	40.87

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RATES IN CENTS PER 2,000 POUNDS, WHEN SHIPPED IN CARLOADS OF NOT LESS THAN 20,000 NOR MORE THAN 30,000 POUNDS. TO BE LOADED AND UNLOADED BY OWNER.

	Wheat, Corn, Barley, Oats, and Rye.												Flour and Millstuffs.						Cattle.						Sheep and Hogs.						Wool.		
	To San Francisco.			To Port Costa.			To Sacramento.			To Stockton.			To San Francisco.			To Sacramento.			To San Francisco.			To Sacramento.			To San Francisco.			To Sacramento.			To San Francisco.		
	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent
	75	65	13.33		35			340		280	255	8.92	200	100	50.00	320	340		160	130	18.75	240	200	16.66	136	105	22.79	204	160	21.57	200	140	30.00
	75	65	13.33					*365		280	255	8.92	200	100	50.00	320	*365		150	130	13.33	240	200	16.66	128	105		204	160	21.57	200	140	30.00
	75	65	13.33		45			*365		280	280		160	100	37.5	320	*365		140	130	7.15	240	200	16.66	119	105	17.97	204	160	21.57	160	140	12.50
	75	65	13.33		45			*365		280	280		160	100	37.5	320	*365		140	130	7.15	240	200	16.66	119	105	11.76	204	160	21.57	160	140	12.50
	75	65	13.33		75			*365		280	280		160	100	37.5	320	*365		140	130	7.15	240	200	16.66	119	105	11.76	204	160	21.57	160	140	12.50
	75	65	13.33		100			*365		280	280		160	100	37.5	320	*365		130	120	7.69	240	200	16.66	110	100	9.09	204	160	21.57	160	140	12.50
	50	50			100			*365		280	280		160	100	37.5	320	*365		130	120	7.69	240	200	16.66	110	100	9.09	204	160	21.57	160	140	12.50
	50	50			100			*365		280	280		140	75	46.43	320	*365		120	110	8.33	240	200	16.66	102	100	1.96	204	160	21.57	140	140	
	50	50			100			*365		280	280		140	75	46.43	320	*365		120	110	8.33	240	200	16.66	102	100	1.96	204	160	21.57	140	140	
	50	50			100			*365		280	280		140	75	46.43	320	*365		110	100	9.09	240	200	16.66	100	100		204	160	21.57	140	140	
	50	50			100			*365		280	280		140	75	46.43	320	*365		110	100	9.09	240	200	16.66	100	100		204	180	21.57	140	140	
	50	50			100			*365		280	280		140	75	46.43	320	*365		110	100	9.09	240	200	16.66	100	100		204	160	21.57	140	135	3.57
	50	50			100			*365		280	280		120	75	37.5	320	*365		100	100		240	200	16.66	100	100		204	160	21.57	120	120	
witch	50	50			100			*365		280	280		120	75	37.5	320	*365		100	100		240	200	16.66	100	100		204	160	21.57	120	115	4.16
	50	50			100			*365		280	280		100	75	25.00	320	*365		95	95		240	200	16.66	95	95		204	160	21.57	100	100	
treet)	50	50			100			*365		280	280		100	75	25.00	320	*365		90	90		240	200	16.66	90	90		204	160	21.57	100	90	10.00
	50	50			100			*365		280	280		60	55	8.33	320	*365		60	55	8.33	240	200	16.66	60	55	8.33	204	160	21.57	60	55	8.33
					100			*365		280	280					320	*365					240	200	16.66				204	160	21.57			
	700	525	25.00		525		700	525	25.00	700	460	34.28		750			750		870	600	31.03	840	600	28.87	740	540	27.03	714	540	24.37	1680	1200	28.57
	700	515	30.71		505		700	515	26.43	700	440	37.14		725			725		870	590	32.18	840	590	29.76	740	535	27.70	714	535	24.07	1680	1200	28.57
	700	510	27.15		490		700	500	28.57	700	425	39.28		720			720		860	585	31.98	830	585	29.52	731	525	28.18	706	525	25.64	1660	1200	27.71
	700	505	27.86		470		700	480	31.43	700	405	42.14		690			690		860	570	33.72	830	570	31.32	731	515	29.55	706	515	27.05	1660	1200	27.71
	600	500	16.66		450		560	460	17.85	485	385	20.61	600	675		560	675		750	570	24.00	720	570	20.83	637	510	19.94	612	510	16.67	1620	1200	25.92
	600	495	17.50		445		560	455	18.75	485	380	21.64	600	670		560	670		730	555	24.00	700	555	20.71	621	500	19.49	595	500	15.97	1620	1200	25.92
	600	490	17.5		440		560	450	19.64	485	375	24.74	600	645		560	645		700	535	23.57	670	535	20.15	595	485	18.49	570	485	14.91	1600	1200	25.00
	600	485	19.16		435		560	445	20.53	485	370	23.71	600	630		560	630		670	520	22.39	640	520	18.75	570	470	17.54	544	470	13.60	1560	1200	23.08
	600	480	20.00		430		560	440	21.42	485	365	24.74	600	615		560	615		660	510	22.73	630	510	19.05	561	450	19.79	535	450	15.89	1530	1200	21.57
	600	475	20.83		425		560	435	22.32	485	360	25.77	600	600		560	600		650	495	23.85	620	495	20.16	553	445	19.53	527	445	15.56	1500	1200	20.00
	600	470	21.66		420		560	430	23.21	485	355	26.80	600	590	1.66	560	590		640	475	25.78	610	475	22.13	544	435	20.04	519	435	16.19	1480	1200	18.92
	600	465	22.5		415		560	425	24.10	485	350	27.83	600	575	4.16	560	575		630	470	25.39	600	470	21.67	536	410	23.51	510	410	19.61	1440	1200	16.67
	600	460	23.33		410		560	420	25.00	485	345	28.86	600	555	7.5	560	555	179	620	450	27.42	590	450	23.73	527	405	23.15	500	405	19.00	1360	1200	11.76
	700	490	30.00		440		700	450	35.71	585	375	35.89	700	660	5.71	700	660	5.71	800	575	28.13	770	575	25.32	637	460	27.79	655	460	29.77	1500	1200	20.00
	675	490	27.41		440		675	450	33.34	560	375	33.03	675	660	2.22	675	660	2.22	760	535	29.60	730	535	26.71	646	430	23.44	621	430	30.76		1200	
	670	490	25.76		440		660	450	31.81	545	375	31.19	660	660		660	660		740	530	28.38	710	530	25.35	629	425	32.43	603	425	29.52	1470	1200	18.38
	635	490	22.83		440		635	450	29.13	520	375	27.88	635	660		635	660		710	505	28.87	680	505	25.74	603	405	32.83	578	405	29.93	1450	1200	17.24
	600	450	25.00		400		560	410	26.78	485	335	30.92	600	525	12.5	560	525	6.25	600	440	26.66	570	440	22.81	510	395	22.55	484	395	18.39	1360	1200	11.76
	600	440	26.66		390		560	400	28.57	485	325	32.98	600	525	12.5	560	525	6.25	590	430	27.12	560	430	23.21	500	380	24.00	476	380	20.17	1240	1200	0.32
	600	435	27.50		385		560	395	29.46	485	320	34.02	600	510	15.00	560	510	8.93	580	425	26.73	550	425	22.73	493	370	24.95	468	370	20.94	1140	1190	
	600	435	27.50		385		560	395	29.46	485	320	34.02	600	510	15.00	560	510	8.93	580	425	26.72	550	425	22.73	493	370	24.95	468	370	20.94	1140	1190	
	550	425	22.72		375		510	385	24.50	435	310	28.73	550	510	7.27	510	510		560	420	25.00	530	420	20.77	476	365	23.32	450	365	18.89	1100	1170	
	500	410	18.00		360		460	370	19.56	385	295	23.37	500	510		460	510		540	415	23.15	510	415	18.63	459	350	23.75	434	350	19.35	1000	1000	
	500	400	20.00		350		460	360	21.73	385	285	25.97	500	505		460	505		520	405	22.11	490	405	17.35	442	340	23.08	416	340	18.27	1000	1000	
	500	390	22.00		340		460	350	23.91	385	275	28.57	500	500		460	500		500	400	20.00	470	400	14.89	425	335	21.18	400	335	16.25	1000	1000	
	500	380	24.00		330		460	340	26.08	385	265	31.16	500	495	1.00	460	495		500	390	22.00	470	390	14.02	425	330	22.35	400	330	17.50	1000	1000	
	500	370	26.00		320		460	330	28.26	385	255	33.76	500	480	4.00	460	480		480	385	19.79	450	385	14.45	408	325	20.34	383	325	15.14	1000	1000	
	500	350	30.00		300		460	310	32.60	385	236	38.96	500	465	7.00	460	465		460	380	15.91	430	380	11.63	391	320	18.17	365	320	12.33	980	980	
	460	335	27.17		285		440	295	32.95	345	220	36.23	460	450	2.17	440	450		440	370	15.91	410	370	9.76	374	315	15.78	349	315	9.74	940	920	2.13
	420	310	26.19		260		380	270	28.42	305	195	36.06	420	420		380	420		420	360	14.29	390	360	7.69	357	310	13.17	331	310	6.34	840	820	2.38
	400	295	26.25		245		360	255	29.16	285	180	36.84	400	395	1.25	360	385		410	350	14.63	380	350	7.89	348	305	12.36	323	305	5.57	780	760	2.56
	400	285	28.75		235		360	245	31.94	285	170	40.35	400	380	5.00	360	380		400	340	15.00	370	340	8.11	340	300	11.76	314	295	6.05	740	720	2.70
	340	280	17.64		230		300	240	20.00	225	165	26.67	340	380		300	380		390	335	14.10	360	335	6.95	331	290	12.39	306	290	5.23	700	680	2.86
	340	275	19.11		225		280	235	16.07	225	160	28.89	340	370		280	370		380	320	15.79	350	320	8.57	323	280	13.31	298	275	7.72	600	560	6.67
	340	260	23.52		210		280	220	21.42	225	145	35.55	340	350		280	350		370	320	13.51	340	320	5.88	315	265	15.87	289	255	11.69	560	520	7.14
	340	260	23.52		210		280	220	21.42	225	145	35.55	340	350		280	350		360	300	16.66	330	300	9.09	306	255	16.67	281	250	11.03	520	480	7.69
	320	250	21.87		200		280	210	25.00	205	135	34.14	320	340		280	340		330	280	15.15	300	280	6.67	280	250	10.72	255	240	5.88	480	440	8.33
	280	230	17.85		180		260	190	26.92	165	115	30.30	280	320		260	310		300	250	16.66	270	250	7.41	256	225	12.11	230	215	6.52	440	360	18.18
	240	210	12.50		160		260	170	34.61	125	95	24.00	240	310		260	280		290	230	20.69	260	230	8.46	247	215	12.96	221	210	4.98	430	340	20.93
	220	200	9.69		150		240	160	33.34	105	85	19.04	220	280		240	280		280	225	19.64	250	225	10.00	238	200	15.97	212	195	8.02	370	320	13.51
	335	260	22.38		210		335	210	37.31	200	160	20.00	335	380		335	330	1.49	330	270	18.18	330	270	18.18	330	215	34.85	330	215	34.85	385	340	1.17
	335	260	22.38		210		335	210	37.31	200	160	20.00	335	380		335	330	1.49	320	270	15.62	320	270	15.63	320	215	32.81	320	215	32.81	375	340	0.93
	335	250	25.37		200		335	200	40.29	185	150	18.91	335	380		335	330	1.49	320	270	15.62	320	270	15.63	320	215	32.81	320	215	32.81	375	340	0.93
	315	240	23.80		190		315	190	39.68	160	140	12.5	315	380		315	330		320	270	15.62	320	270	15.63	320	215	32.81	320	215	32.81	375	340	0.93
	285	225	21.05		175		285	175	38.59	130	125	3.84	285	380		385	330		320	270	15.62	320	270	15.63	320	215	32.81	320	215	32.81	375	340	0.93
	345	250	27.53		200		345	200	42.02	190	150	2.10	345	370		345	320	7.24	320	270	15.62	320	270	15.63	320	215	32.81	320	215	32.81	375	320	1.47
	325	245	24.61		195		325	195	40.00	170	145	14.70	325	370		325	320	1.54	320	270	15.62	320	270	15.63	320	215	32.81	320	215	32.81	375	320	1.47

a Benicia, deduct 40 cents per ton.

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RATES IN CENTS PER 2,000 POUNDS, WHEN SHIPPED IN CARLOADS OF NOT LESS THAN 20,000 NOR MORE THAN 30,000 POUNDS. TO BE LOADED AND UNLOADED BY OWNER.

	Wheat, Corn, Barley, Oats, and Rye.												Flour and Millstuffs.						Cattle.						Sheep and Hogs.						Wool.		
	To San Francisco.			To Port Costa.			To Sacramento.			To Stockton.			To San Francisco.			To Sacramento.			To San Francisco.			To Sacramento.			To San Francisco.			To Sacramento.			To San Francisco.		
	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent	Rates in 1879	R. R. Commission Rates	Decrease, per cent
	255	200	21.57		150		255	160	37.25	100	100		255	370		255	320		320	265	17.19	310	265	14.51	314	215	31.53	274	215	21.53	375	320	14.66
	255	200	21.57		150		255	160	37.25	90	90		255	370		255	320		320	265	17.19	310	265	14.51	314	215	31.53	274	215	21.53	375	320	14.66
	245	200	18.36		150		245	160	34.69	80	80		245	370		245	320		320	260	18.75	300	260	13.33	304	210	30.92	264	210	20.45	375	320	14.66
	245	200	18.36		150		245	160	34.69	70	70		245	370		245	300		320	260	18.75	270	260	3.70	274	210	23.36	234	210	10.29	370	320	13.51
	210	175	11.90		165		160	275		160	155	3.12	210	280		260	280		210	200	4.76	210	200	4.76	179	160	10.61	179	160	10.60	280	280	
	225	185	17.77		235		280	320		170	160	5.88	225	260		280	320		200	200		220	200	9.10	170	160	5.89	188	160	14.84	260	260	
	225	185	17.77		275		280	340		180	200		225	260		280	340		190	190		220	200	9.10	161	155	3.75	188	160	14.84	260	260	
	225	185	17.77		280		280	360		200	240		225	260		280	360		180	180		230	200	13.04	153	145	5.23	196	160	18.36	260	260	
	225	185	17.77		260		300	365		220	260		225	240		300	365		170	170		230	200	13.04	145	135	6.90	196	160	18.36	240	240	
	150	150			225		320	365		240	260		150	200		320	365		160	160		240	200	16.66	136	130	4.41	204	160	21.56	200	200	
	220	175	20.42		245		340	365		280	280		220	260		340	365		180	160	11.11	240	200	16.66	153	130	15.03	204	160	21.56	260	260	
	220	150	31.82		245		240	365		280	280		220	225		340	365		170	140	17.64	240	200	16.66	145	115	20.70	204	160	21.56	240	260	
	125	125			225		340	365		260	280		125	190		340	365		170	120	29.41	240	200	16.96	145	100	31.05	204	160	21.56	240	220	8.33
	100	100			200		340	365		260	280		100	150		340	365		160	100	37.50	240	200	16.66	136	100	26.47	204	160	21.56	200	180	10.00
	100	100			200		320	365		240	260		100	150		320	365		150	100	33.33	240	200	16.66	128	100	21.90	204	160	21.56	200	180	10.00
	100	100			200		320	365		240	260		100	150		320	365		140	100	28.50	240	200	16.66	119	100	16.00	204	160	21.56	160	180	
	100	100			200		320	365		260	260		100	150		320	365		140	100	28.50	240	200	16.66	119	100	16.00	204	100	21.56	160	160	
	100	100			200		340	365		260	280		100	150		340	365		140	100	28.50	240	200	16.66	119	100	16.00	204	160	21.56	160	160	
	100	100			200		340	365		260	280		100	150		340	365		140	100	28.50	240	200	16.66	119	100	16.00	204	160	21.56	160	160	
	100	100			200		340	365		260	280		100	140		340	365		120	100	16 66	240	200	16.66	102	100	2.00	204	160	21.56	140	140	
	100	100			180		340	365		280	280		100	140		340	365		120	100	16.66	240	200	16.66	102	100	2.00	204	160	21·56	140	140	
	100	100			165		340	365		280	280		100	140		340	365		110	90	18.18	240	200	16.66	100	90	10.00	204	160	21.56	140	140	
	100	100			140		340	365		280	280		100	130		340	365		110	90	18.18	240	200	16.66	100	90	10.00	204	160	21.56	140	135	3.57
	100	95	05.00		110		320	365		280	280		100	100		320	365		90	90		240	200	16.66	90	90		204	160	21.56	100	100	
	140	100	28.57		140		320	265		280	280		140	140		320	365		120	90	25.00	240	200	16.66	102	90	11.76	204	160	21.56	140	140	
	140	100	28.57		140		320	365		280	280		140	140		320	365		110	90	18.18	240	200	16.66	100	90	10.00	204	160	21.56	140	140	
treet)	100	65	35.00		100		320	*365		280	280		100	90	10.00	320	*365		90	90		240	200	16.66	90	90		204	160	21.56	100	100	
	100	50	50.00		100		320	†365		280	280		100	75	25.00	320	†365		90	90		240	200	16.66	90	90		204	160	21.56	100	90	10.00
	300	210	30.00		160		150	120	20.00				480	250	47.91	200	150	25.00	330	200	39.08	160	100	37.48	281	160	43.06	136	100	26.47	720	360	50.00
	300	210	30.00		160		170	130	23.52				460	250	45.65	255	160	37.25	310	200	35.49	180	130	27.78	264	160	39.39	153	105	31.37	690	360	47.83
	275	200	27.27		150		190	140	26.31				440	225	48.86	310	160	48.38	300	200	33.34	200	150	25.00	255	160	37.25	170	120	29.41	660	360	45.45
	260	200	23.07		150		205	145	29.26				420	225	46.42	325	170	47.69	290	200	31.03	220	165	25.00	247	160	35.22	187	135	27.80	630	360	42.85
	250	190	24.00		140		220	160	27.27				400	215	46.25	340	175	48.52	270	200	25.92	240	190	20.80	230	160	30.43	204	155	24.02	600	300	50.00
	225	180	20.00		130		230	190	17.39				350	200	42.85	365	190	47.94	250	200	25.00	260	200	23.07	213	160	24.88	221	160	27.60	525	250	52.38
	187½	140	25.33		90		275	200	27.27				300	170	43.33	395	250	36.70	240	150	37.50	280	200	28.57	204	120	41.17	238	160	32.77	450	170	62.22
		130			80			200						170			265			150			200			120			160			170	
		120			75			200						170			265			150			200			120			160			170	
		75			50			200						150			265			130			200			105			160			150	
	310	230	25.80		210			290					500	250	50.00	545	345	36.69	310	270	12.90	440	320	27.27	260	235	9.61	374	255	31.73	750	360	52.00
	300	225	25.00		200			290					475	240	49.47	535	340	36.44	300	260	13.34	430	310	27.90	255	225	11.76	366	250	31.69	713	320	55.12
	300	220	26.67		200			290					450	240	46.67	530	335	36.79	290	250	13.79	420	310	26.19	247	215	12.95	357	250	29.97	675	300	55.55
	300	210	20.00		195			285					450	230	48.88	530	335	36.79	290	240	17.34	420	300	28.57	247	210	14.97	357	240	32.77	675	290	57.04
	275	200	27.27		170			285					425	225	47.05	525	335	36.19	280	230	17.85	410	300	26.82	238	205	13.44	349	240	31.23	638	280	56.11
	225	195	13.34		150			285					395	220	44.30	515	325	36.89	270	220	18.51	400	290	27.50	230	195	15.21	340	235	30.88	593	280	52.78
	205	190	7.31		140			285					375	215	42.66	510	320	37.25	260	210	19.23	390	290	25.64	221	185	16.28	332	235	29.21	563	260	53.82
	200	185	7.50		135			285					360	210	41.09	510	320	37.25	250	200	20.00	390	290	25.64	213	175	17.84	332	235	29.21	540	255	52.77
	175	175			125			285					300	200	33.33	500	315	37.00	230	190	17.39	380	280	26.30	196	160	18.36	323	225	30.34	450	215	52.22
	175	170	2.85		125			285					260	170	34.61	490	310	36.73	220	170	22.72	370	270	27.02	187	135	27.80	315	215	31.74	390	170	56.41
	175	170	2.85		125			285					245	170	30.61	490	310	36.73	200	170	15.00	360	270	25.00	170	135	20.58	304	215	29.27	368	170	53.80
	175	170	2.85		125			285					245	170	30.61	490	305	37.75	200	170	15.00	360	270	25.00	170	135	20.58	304	215	29.27	368	170	53.80
	175	170	2.85		125			285					200	170	15.00	475	300	36.84	150	150		350	260	25.71	128	120	6.25	298	210	29.53	300	170	43.33
	175	170	2.85		125			285					175	170	2.85	470	295	37.23	150	150		340	250	26.47	128	120	6.25	289	200	34.25	263	170	35.36
		170			125			225						170		425	265	37.64		150		320	200	37.50		120		272	160	41.18		170	
		170			125			225						170		425	265	37.64		150		320	200	37.50		120		272	160	41.18		170	
		170			125			225						170		425	265	37.64		150		320	200	37.50		120		272	160	41.18		170	
	175	170	2.85		125		310	225	27.41				175	170	2.85	425	265	37.64	130	150		320	200	37.50	106	120		272	160	41.18	263	170	35.36
	175	170	2.85		125		300	225	25.00				215	170	20.93	420	260	38.09	180	150	16.67	310	200	35.48	153	120	21.56	264	160	39.39	323	170	47.37
	187½	170	9.42		120		290	225	22.41				275	170	38.18	410	250	39.02	220	150	31.81	290	200	31.03	187	120	35.82	247	160	35.22	413	170	58.83

via Benicia, deduct 40 cents per ton.

† If forwarded via Benicia, deduct 25 cents per ton.

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MISSIONERS' SUBJECT TO THE RULES AND CLASSIFICATION GOVERNING THE TRANSPORTATION OF PROPERTY, AS PUBLISHED IN THE GENERAL TARIFF, DATED JANUARY 1, 1880.

[This Table shows Old Rates, and New Rates fixed by the Board of Railroad Commissioners; also, the Per Cent Decrease.]

RATES IN CENTS PER 2,000 POUNDS, WHEN SHIPPED IN CARLOADS OF NOT LESS THAN 20,000 NOR MORE THAN 30,000 POUNDS. TO BE LOADED AND UNLOADED BY OWNER.

	Wheat, Corn, Barley, Oats, and Rye.												Flour and Millstuffs.						Cattle.						Sheep and Hogs.						Wool.		
	To San Francisco.			To Port Costa.			To Sacramento.			To Stockton.			To San Francisco.			To Sacramento.			To San Francisco.			To Sacramento.			To San Francisco.			To Sacramento.			To San Francisco.		
	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.	Rates in 1879	R. R. Commission Rates.	Decrease per cent.
.....	600	*480	26.67	.....	†430	.....	400	340	15.00	485	365	24.74	606	*540	16.67	400	400	-- ----	810	585	27.78	590	500	15.25	688	495	28.05	501	425	15.17	1220	1000	18.03
.....	600	*480	26.67	.....	†430	.....	400	340	15.00	485	365	24.74	600	*540	16.67	400	400	-- ----	800	575	28.13	580	495	14.66	680	490	27.90	493	420	14.81	1200	960	20.00
.....	600	*475	27.50	.....	†425	.....	400	335	16.25	485	360	25.77	600	*540	16.67	400	400	-- ----	790	570	27.85	570	490	14.04	672	485	27.83	484	410	15.29	1180	960	18.64
.....	600	*470	28.33	.....	†420	.....	400	330	17.50	485	355	26.80	600	*540	16.67	400	400	-- ----	790	570	27.85	570	480	15.79	672	485	27.83	484	405	16.32	1180	920	22.03
.....	600	*465	29.17	.....	†415	.....	400	325	17.75	485	350	27.84	600	*515	20.83	400	375	6.25	770	560	27.27	550	475	13.64	655	480	26.72	468	395	15.60	1140	920	19.30
.....	600	*465	29.17	.....	†415	.....	400	325	18.75	485	350	27.84	600	*515	20.83	400	375	6.25	770	550	28.51	550	475	13.64	655	475	27.48	468	395	15.60	1140	920	19.30
.....	600	*460	30.00	.....	†410	.....	400	320	20.00	485	345	28.87	600	*510	21.67	400	370	7.50	760	540	28.95	540	460	14.81	646	470	27.24	459	390	15.03	1120	900	19.64
.....	600	*440	33.33	.....	†390	.....	400	300	25.00	485	325	33.01	600	*490	25.00	400	350	12.50	710	520	26.76	520	460	11.54	603	460	23.71	442	375	15.16	1080	840	22.22
.....	600	*440	33.33	.....	†390	.....	400	300	25.00	485	325	33.01	600	*490	25.00	400	350	12.50	680	510	25.00	510	450	11.76	578	460	20.41	433	370	14.55	1040	840	19.23
.....	600	*440	33.33	.....	†390	.....	400	300	25.00	485	325	33.01	600	*490	25.00	400	350	12.50	660	500	24.24	500	445	11.00	551	460	16.51	425	360	15.29	1000	840	16.00
.....	600	*440	33.33	.....	†390	.....	400	300	25.00	485	325	33.01	600	*490	25.00	400	350	12.50	660	500	24.24	490	440	10.20	551	460	16.51	417	355	14.87	980	840	14.29
.....	595	*440	32.77	.....	†390	.....	400	300	25.00	480	325	32.29	595	*490	24.37	400	350	12.50	660	500	24.24	490	440	10.20	551	460	16.51	417	355	14.87	980	840	14.29
.....	595	*440	32.77	.....	†390	.....	400	300	25.00	480	325	32.29	595	*490	24.37	400	350	12.50	660	500	24.24	490	440	10.20	551	460	16.51	417	355	14.87	980	800	18.37
.....	575	*435	31.30	.....	†385	.....	380	295	22.37	460	320	30.45	575	*470	25.22	380	330	13.16	630	490	22.22	480	435	9.38	536	450	16.04	408	350	14.22	920	760	17.39
.....	564	*430	30.97	.....	†380	.....	370	290	21.62	450	315	30.00	565	*460	25.66	370	320	13.51	610	490	19.67	470	430	8.51	519	450	13.29	400	345	13.75	880	760	13.64
.....	560	*425	31.25	.....	†375	.....	365	285	21.92	445	310	30.34	560	*455	25.89	365	315	13.70	600	485	19.17	460	425	7.61	510	445	12.75	391	340	13.04	860	720	16.28
.....	555	*420	31.53	.....	†370	.....	360	280	22.22	440	305	30.68	555	*450	26.13	360	310	13.89	590	480	18.64	460	425	7.61	502	445	11.35	391	340	13.04	840	720	14.29
.....	550	*415	31.82	.....	†365	.....	355	275	22.54	435	300	31.03	550	*445	26.36	355	305	14.09	580	480	17.24	450	420	6.67	493	440	10.75	382	335	12.30	820	700	14.63
.....	545	*415	31.19	.....	†365	.....	350	275	21.43	430	300	30.43	545	*445	25.69	350	305	12.86	570	480	15.79	450	420	6.67	480	440	8.33	382	335	12.30	800	670	16.25
.....	535	*410	30.84	.....	†360	.....	335	270	19.40	420	295	29.76	535	*430	27.10	335	290	13.43	550	475	13.64	440	400	10.00	467	430	7.92	374	320	14.44	760	620	18.42
.....	525	*410	29.52	.....	†360	.....	315	270	14.29	410	295	28.05	525	*425	26.67	315	285	9.52	530	475	10.38	400	390	2.50	451	425	5.76	340	315	7.35	760	600	21.05
.....	520	*405	29.80	.....	†355	.....	315	265	15.87	405	290	28.30	520	*415	27.88	315	275	12.70	530	475	10.38	390	380	2.56	451	425	5.76	332	305	8.10	760	600	21.05
.....	505	*400	28.71	.....	†350	.....	315	260	17.46	390	285	26.92	505	*400	28.71	315	260	17.46	510	460	9.80	360	350	2.77	433	410	5.31	306	280	8.49	720	560	22.22
.....	495	*390	29.27	.....	†340	.....	315	250	20.64	380	275	27.63	495	*390	29.29	315	250	20.63	500	460	7.14	350	350	-- ----	425	400	5.88	297	280	5.72	700	520	25.71
.....	480	*375	30.20	.....	†325	.....	275	235	14.54	365	260	28.77	480	*375	30.20	275	235	14.54	480	450	6.25	310	310	-- ----	408	385	5.63	264	260	1.52	680	500	26.48
.....	475	*360	32.63	.....	†310	.....	275	220	20.00	360	245	31.94	473	*360	32.63	275	220	18.18	470	440	6.38	300	300	-- ----	400	375	6.25	255	240	5.88	640	480	25.00
.....	445	*440	32.58	.....	†290	.....	260	200	23.08	330	225	31.82	445	*340	32.58	260	200	23.08	470	430	8.51	290	260	10.34	400	360	10.00	247	210	14.98	640	460	28.13
.....	425	*335	30.59	.....	†285	.....	240	195	18.75	310	220	29.03	425	*335	30.59	240	195	18.75	440	430	2.27	240	240	-- ----	374	355	5.08	204	205	-- ----	600	440	26.67
.....	325	*330	10.77	.....	†280	.....	210	190	9.52	210	215	-- ----	325	*330	10.72	210	190	9.52	420	400	4.76	200	200	-- ----	357	320	10.36	170	160	5.88	500	420	16.00
.....	355	*330	18.31	.....	†280	.....	240	190	23.83	240	215	10.42	355	*330	18.31	240	190	20.83	420	390	7.14	200	200	-- ----	357	320	10.36	170	160	5.88	560	420	25.00
.....	415	*330	30.12	.....	†280	.....	240	190	20.83	300	215	48.33	415	*330	30.12	240	190	20.83	420	380	9.52	200	200	-- ----	357	320	10.36	170	160	5.88	560	420	25.00
.....	325	*320	13 85	.....	†270	.....	240	180	25.00	325	205	36.92	325	*320	13.84	240	180	25.00	420	370	11.90	190	190	-- ----	357	315	11.20	162	155	4.32	560	420	25.00
.....	325	*320	13.85	.....	†270	.....	240	180	25.00	325	205	36.92	325	*320	13.84	240	180	25.00	400	360	10.00	180	180	-- ----	340	305	10.29	153	145	5.23	560	420	25.00
.....	420	*320	33.33	.....	†270	.....	220	180	18.18	305	205	32.78	420	*320	33.33	220	180	18.18	380	350	7.89	170	170	-- ----	323	295	8.67	144	135	6.25	540	420	22.22
.....	420	*310	35.71	.....	†260	.....	220	170	22.73	305	195	36.07	420	*310	35.71	220	170	22.73	360	340	5.55	160	160	-- ----	306	290	5.22	136	130	4.41	520	400	23.08
.....	420	*305	36.90	.....	†255	.....	175	165	5.71	305	190	37.70	420	*305	36.90	220	165	25.00	360	340	5.55	160	160	-- ----	306	290	5.22	136	130	4.41	520	400	23.08
.....	380	*300	31.58	.....	†250	.....	140	140	-- ----	260	185	28.85	380	*300	31.58	140	140	-- ----	340	280	17.64	120	120	-- ----	289	240	16.95	102	100	1.96	480	400	16.66
.....	380	*290	34.21	.....	†240	.....	100	100	-- ----	260	175	32.69	380	*290	34.21	140	140	-- ----	320	260	18.74	110	110	-- ----	272	210	22.79	100	100	-- ----	440	400	9.09
.....	380	*275	38.18	.....	†225	.....	100	100	-- ----	260	160	38.46	380	*290	34.21	100	100	-- ----	300	240	20.00	90	90	-- ----	255	195	23.53	90	90	-- ----	400	400	-- ----
.....	380	*275	38.18	.....	†225	.....	100	90	10.00	260	160	38.46	380	*290	34.21	100	90	10.00	300	240	20.00	90	90	-- ----	255	195	23.53	90	90	-- ----	400	400	-- ----
.....	380	*275	38.18	.....	†225	.....	60	45	25.00	260	160	38.46	380	*290	34.21	60	45	25.00	270	220	18.51	60	45	25.00	230	175	23.91	60	45	25.00	360	400	-- ----
.....	200	*265	----	.....	†215	.....	----	----	----	260	150	42.31	200	*290	----	----	----	----	240	200	16.65	----	----	----	204	160	21.57	----	----	----	320	360	-- ----
.....	320	265	17.19	.....	215	.....	100	90	10.00	200	150	25.00	320	280	12.50	100	90	10.00	240	200	16.66	90	85	5.55	204	160	21.57	90	85	5.55	320	360	-- ----
.....	320	265	17.19	.....	315	.....	100	120	-- ----	200	150	25.00	320	280	12.50	100	120	-- ----	240	200	16.66	100	100	-- ----	204	160	21.57	100	100	-- ----	320	320	-- ----
.....	320	265	17.19	.....	215	.....	100	120	-- ----	200	150	25.00	250	280	-- ----	120	120	-- ----	240	200	16.66	120	120	-- ----	204	160	21.57	102	100	1.96	320	320	-- ----
.....	320	265	17.19	.....	215	.....	100	135	-- ----	200	150	25.00	320	280	12.50	140	140	-- ----	240	200	16.66	120	120	-- ----	204	160	21.57	102	100	1.96	320	320	-- ----
.....	425	325	23.53	.....	275	.....	310	210	32.26	310	210	32.26	425	385	9.40	310	320	-- ----	390	300	23.07	290	280	3.45	331	250	24.42	247	225	8.91	630	440	30.16
.....	425	325	23.53	.....	275	.....	310	210	32.26	310	210	32.26	425	385	9.40	310	320	-- ----	380	300	21.05	280	280	-- ----	323	250	22.60	238	225	5.46	570	440	22.80
.....	365	325	10.96	.....	275	.....	250	210	16 00	250	210	16.00	425	335	21.17	310	260	16.13	350	250	28.56	246	230	4.16	298	200	32.89	204	200	1.95	470	380	19.15
.....	355	325	8.45	.....	275	.....	240	210	12.50	240	210	12.50	425	335	21.17	290	260	10.34	330	250	24.24	220	230	-- ----	280	200	28.57	187	200	-- ----	450	380	15.15
.....	275	250	9.09	.....	200	.....	160	135	15.62	160	135	15.62	275	280	-- ----	160	160	-- ----	240	200	16.66	140	140	-- ----	204	160	21.57	119	115	3.36	320	320	-- ----
.....	225	225	----	.....	175	.....	180	160	11.11	110	110	-- ----	225	280	-- ----	180	200	-- ----	240	200	16.66	150	150	-- ----	204	160	21.57	127	120	5.51	300	300	-- ----
.....	200	220	----	.....	170	.....	180	160	11.11	100	105	-- ----	200	280	-- ----	180	200	-- ----	240	200	16.66	160	150	6.25	204	160	21.57	136	120	11.76	300	300	-- ----
.....	200	220	----	.....	170	.....	220	160	27.27	100	90	10.00	200	280	-- ----	220	240	-- ----	230	200	13.04	170	170	-- ----	195	160	17.95	145	135	6.90	300	300	-- ----
.....	150	200	----	.....	150	.....	220	160	27.27	----	----	----	150	280	-- ----	220	240	-- ----	230	200	13.04	180	180	-- ----	195	160	17.95	153	145	5.23	280	280	-- ----
.....	----	200	----	.....	150	.....	240	160	33.33	100	75	25.00	----	280	-- ----	240	260	-- ----	230	200	13.04	190	180	5.26	195	160	17.95	162	145	10.49	280	280	-- ----
.....	220	200	9.09	.....	150	.....	240	160	33.33	100	85	15.00	220	280	-- ----	240	260	-- ----	220	200	9.09	190	190	-- ----	187	160	14.44	162	155	4.32	280	280	-- ----
.....	210	190	9.57	.....	140	.....	240	205	44.58	120	125	-- ----	210	280	-- ----	240	260	-- ----	220	200	9.09	200	190	5.00	187	160	14.44	170	155	8.82	280	280	-- ----
.....	210	190	9.57	.....	140	.....	240	240	----	140	125	10.71	210	280	-- ----	240	260	-- ----	220	200	9.09	200	200	-- ----	187	160	14.44	170	160	5.88	280	280	-- ----
.....	210	185	11.90	.....	135	.....	260	245	5.76	140	125	10.71	210	280	-- ----	260	280	-- ----	220	200	9.09	210	200	4.76	187	160	14.44	178	160	10.11	280	280	-- ----
.....	150	135	10.00	.....	110	.....	280	320	-- ----	160	160	-- ----	210	205	2.38	280	320	-- ----	220	155	30.00	220	200	9.09	187	125	33.16	187	160	14.44	280	280	-- ----
.....	135	125	7.40	.....	100	.....	280	340	-- ----	200	200	-- ----	210	190	9.57	280	340	-- ----	210	150	28.57	220	200	9.09	179	120	32.96	187	160	14.44	280	280	-- ----
.....	125	115	8.00	.....	90	.....	280	340	-- ----	240	240	-- ----	210	175	16.66	280	340	-- ----	200	150	25.00	230	200	13.04	170	120	29.41	195	160	17.95	260	260	-- ----
.....	100	100	-- ----	.....	70	.....	280	340	-- ----	260	255	1.92	210	150	28.57	300	340	-- ----	180	130	27.77	230	200	13.04	153	105	31.37	195	160	17.95	260	260	-- ----
.....	100	100	-- ----	.....	60	.....	280	340	-- ----	260	255	1.92	210	150	28.57	300	340	-- ----	180	130	27.77	240	200	16.66	153	105	31.37	204	160	21.57	260	260	-- ----

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COMPLAINT OF W. H. ROBINSON,

AGAINST THE CALIFORNIA PACIFIC RAILROAD COMPANY,

ANSWER OF A. N. TOWNE, Gen'l Superintendent,

AND

OPINION OF A. L. HART, Attorney-General.

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COMPLAINT.

SUISUN, August 1, 1881.

Secretary Board of Railroad Commissioners:

DEAR SIR: I present specific complaint. At the proper time, I have witnesses to subpœna, and will give names, etc. It may be that the railroad company will admit all the allegations of my complaint; if so, no witnesses are needed. But I suppose you will give me proper directions and notice of how to proceed further in due time.

Respectfully yours,

W. H. ROBINSON.

W. H. ROBINSON VS. CALIFORNIA PACIFIC RAILROAD COMPANY.

To the honorable Board of Railroad Commissioners of the State of California:

The complainant in this case is W. H. Robinson, of Suisun, Solano County, California.

The party complained of is the corporation known as the California Pacific Railroad Company, now doing business as carriers of freight and passengers in the State of California.

The grievances complained of are as follows:

CAUSE I.

On the twenty-third day of April, 1881, at the depot of said corporation, in the village of Elmira, Solano County, the complainant in this case presented to the baggage agent of said corporation his baggage, packed in a moderate sized trunk, in proper condition for conveyance, and containing nothing dangerous or disagreeable, and only such baggage as was necessary for this complainant to carry with him. He also presented two valid first-class tickets from Elmira to Suisun and requested corporation to check his baggage and carry it to Suisun. Both of said tickets this complainant had purchased and paid for from said corporation or its agents. The agent of said corporation took said tickets and canceled them by writing "Baggage checked April 23d" on each of them and then returning said tickets to complainant. But said corporation, by its agent, refused to give complainant any check for his baggage, or to receive it, or convey as per contract made by canceling his tickets. Complainant repeatedly demanded the checking and conveyance of his baggage but was refused because the agent stated one of his tickets was "a coupon ticket," but he made no objection to said ticket till after he had received it and canceled it.

Complainant then called Prof. J. K. Bateman, of Elmira, as a witness, again presented his two tickets, and demanded of the agent of said corporation that he check and convey this complainant's baggage. But said agent refused again, in the presence of said witness, because one ticket was a coupon ticket; and said corporation did not carry this complainant's baggage, in consequence of which this complainant's baggage was delayed and his rights invaded, and for which invasion of rights and breach of contract this complainant demands five hundred dollars damages.

The ticket on which said corporation refused to check complainant's baggage was sold to him by the agent of said corporation at Vacaville, Solano County, California, and was the usual and only kind of ticket sold between Vacaville and Suisun. It was bought on the twenty-third day of April, 1881. Its number was 336. The same day said corporation received it from complainant as a passenger, and complainant had written on it about as follows:

"Keep this ticket, as check for baggage was refused on it. W. H. ROBINSON."

Complainant also forthwith notified said corporation about said ticket, requesting them to keep it, and now asks that said corporation be ordered to produce said ticket before this honorable Board of Railroad Commissioners. The other ticket on which they refused to check baggage is hereto appended; also another ticket *exactly* like the one they refused to check baggage on, except date:

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54

VACA VALLEY AND CLEAR LAKE RAILROAD.

California Pacific Railroad.

SPECIAL-LIMITED-TICKET.

Good for One Continuous

FIRST CLASS PASSAGE

ELMIRA

—TO—

SUISUN.

In consideration of this ticket being sold at a reduced price from the regular, first-class rate, *it is hereby understood and agreed upon by the purchaser that it will not be good for passage after the date indicated* by the Agent's Punch Marks in the margin, and that it shall become "Void" if not presented for passage on the trip for which sold; also, that no stop-over privileges will be granted hereon.

Agents will in no case extend time on this ticket.

If more than one date be canceled, it will not be received for passage by conductors.

In case of error on part of agent, or question of doubt between Holder and Conductor, pay latter's claim, take his receipt, and all irregularities reported to the General Office shall be satisfactorily adjusted.

☞ THIS TICKET IS GOOD ONLY IN ONE DIRECTION.

IF FOR ½ PUNCH HERE.

NO STOP-OVER PRIVILEGES GIVEN HEREON.

"NOT TRANSFERABLE."

Baggage must not be checked hereon to or from an Intermediate, Way-Station.

SUISUN S. 1

V. V.

T. H. GOODMAN, Gen. Pass. and Tkt Agt.

1	17		Jan.
2	18		Feb.
3	19		March
4	20		April.
5	21		May.
6	22		June.
7	23		July.
8	24		*Aug.
9	25		Sep.
10	26		Oct.
11	27		Nov.
*12	28		Dec.
13	29		
14	30		
15	31		
16			
*1880	1881		1882

* Punched by Conductor.

Issued by VACA VALLEY AND CLEAR LAKE RAILROAD.

381

SPECIAL FIRST CLASS

VACA VALLEY AND CLEAR LAKE R. R.

VACAVILLE

TO

ELMIRA.

Baggage Checked only to Elmira.

CHECK

V. V.

SUISUN. S. 1

This Check will not be good under any circumstances if detached from the Destination Ticket.

VV&CL____Cal. P.

Indorsed on back: "July 2d, '81."

CAL. P. R. R.

ELMIRA

TO

SUISUN.

75

Not good unless dated on the back.

Whole. 2838

T. H. GOODMAN, Gen. Pass. and Ticket Agent.

Indorsed on back: "Baggage Checked April 23; 336."

CAUSE II.

On the eleventh day of June, 1881, at the same place described in Cause I, this complainant presented two valid first class tickets to said corporation's baggage agent, and asked his trunk checked to Suisun. Said agent said he had received special instructions about checking complainant's baggage, and demanded of complainant what was in his trunk. Complainant answered: "My private baggage." The agent of said corporation then told complainant to open his trunk and allow said agent to inspect its contents. Complainant refused to open his trunk and allow said corporation, by its agent, to inspect his private baggage; saying, he would allow no one except an officer of the law with a search warrant to open his trunk and inspect his baggage; and said baggage agent then refused to check or convey this complainant's baggage, and said corporation did not then receive or check this complainant's baggage or carry it, thereby damaging this complainant and invading his rights; for which damages this complainant asks one hundred dollars damages.

CAUSE III.

On the second day of July, 1881, this complainant presented one valid passenger ticket to said corporation; also his baggage contained in trunk—said trunk and contents weighing less than one hundred pounds (100 lbs)., and asked it checked to Suisun, but was refused because he would not comply with the demand of the agent of said corporation to open his trunk and allow said agent to inspect his baggage.

Dr. W. E. Fifield, being duly sworn, deposes and says that he is a resident of Madison, Yolo County, California, of lawful age; and that on the second day of July, A. D. 1881, he was at the railroad depot, Elmira, Solano County, California; that he knows W. H. Robinson, of Suisun, California, and that this deponent was present and witnessed the following acts and words between the agent of the California Pacific Railroad Company and W. H. Robinson aforesaid:

W. H. Robinson presented a valid first-class ticket between Elmira and Suisun, to said agent of California Pacific Railroad Company, and asked his trunk checked to Suisun. Said agent asked: "What is in your trunk?" W. H. Robinson replied, "My private baggage." The agent then said, "You must open your trunk, and show me the contents before I will check it." W. H. Robinson answered, "I will not allow you or any other man to open my trunk, and inspect my private baggage." The agent then said, "I will not check your trunk unless you will allow me to open your trunk and inspect its contents, because I suspect there are dental instruments in it." And said agent did refuse to check said truuk, and did not check it. Said trunk was not a large trunk, and W. H. Robinson stated that it weighed less than one hundred pounds, and further deponent saith not.

W. E. FIFIELD.

Subscribed and sworn to before me, this eleventh day of July, A. D. 1881.

J. E. WOOLTEN, Justice of the Peace, Cottonwood Township, County of Yolo, State of California.

STATE OF OHIO, HIGHLAND COUNTY—*ss.*

J. K. Bateman, being duly sworn, on his oath deposes as follows:

On or about April 25, 1881, I was in the office of the California Pacific Railroad Company, in the town of Elmira, Solano County, California, and witnessed the following facts, as nearly as I can recall them: Dr. W. H. Robinson, of Suisun City, Solano County, California, called me to witness that Mr. Kendall, the railroad company's agent at Elmira, before mentioned, upon presentation of two first-class tickets by the said Dr. Robinson, refused to check and convey free of charge, from Elmira to Suisun, the trunk of the said Dr. W. H. Robinson; the reason given by the said Kendall being that one of the said tickets was a coupon ticket, issued from another office. Said tickets were canceled "baggage checks," but I did not see the cancellations made, though I think Mr. Kendall acknowledged having made them; at least Rob-

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inson so stated in my presence and that of Mr. Kendall, and Kendall did not deny. Robinson and Kendall are both personally known to me. Further than this, deponent saith not.

J. K. BATEMAN.

Sworn to before me, and signed in my presence, this twenty-ninth day of November, A. D. 1881.

[SEAL.] JOHN T. HIVE,
Notary Public, Highland County, Ohio.

Indorsed: Filed in office Railroad Commissioners; received January 11, 1882; acknowledged 12:15 A. M.

This complainant then called Dr. Fifield as a witness, and his affidavit is hereunto annexed, and made a part of this complaint, and states the facts of this case. By the refusal to check this complainant's baggage in this case, he was damaged, and his rights invaded, and for which he asks one hundred dollars damages.

CAUSE IV.

On the twenty-third day of July complainant presented to the agent of said corporation, at Elmira, his baggage contained in trunk weighing less than one hundred pounds, and one valid passenger ticket from Elmira to Suisun, and requested his baggage checked and carried to Suisun. The baggage agent demanded, "What is in your trunk?" Complainant answered, "My private baggage." Then agent told complainant to open his trunk and allow him to inspect its contents, but this complainant refused to open his trunk, or allow said agent of said corporation to inspect his private baggage, and then said agent refused to check or carry this complainant's baggage.

This complainant then asked said agent to state definitely why, or on what grounds, he refused to check said trunk. Said baggage agent answered: "Well, you know the fuss there has been about checking your trunk, and there might be in it something besides your personal baggage." And said agent did not check nor carry complainant's baggage at that time.

Complainant's trunk and its contents at that time weighed less than one hundred pounds, and, in fact, did not contain any dental instruments, materials, or tools, or anything pertaining to dentistry except a dentist's clothes, and this complainant assured said baggage agent that said trunk contained his personal baggage, and that there was nothing in said trunk in any way dangerous or disagreeable, and that it and its contents were in proper condition for transportation. But said agent of said corporation refused to check or carry this complainant's baggage, and did not then do so, in consequence of which this complainant's baggage was delayed, and his rights invaded, and for which damages this complainant asks one hundred dollars damages.

This complainant has frequently and plainly stated to the head officers of said corporation, the California Pacific Railroad Company, the grievances he here complains of, and asked redress. But said corporation has utterly refused to give him any redress, and claim they have a right to do as this complaint shows they have done. Therefore this complainant prays the honorable Board of Railroad Commissioners:

I.

That they order and compel the said corporation, the California Pacific Railroad Company, to check and carry his baggage the same as they do the baggage and trunks of other passengers, without subjecting his baggage and trunk to unreasonable conditions and discrimination.

II.

And that this honorable Board of Railroad Commissioners deny to said railroad company, and its agents, the right claimed by them to open and inspect the private baggage of this complainant, or other passengers.

III.

This complainant asks the honorable Board of Railroad Commissioners, that they issue an order and rules that will prevent the unjust and unreasonable discrimination now made by said corporation, the California Pacific Railroad Company, and other railroad companies make and claim the right to make, in carrying the baggage of passengers who pay the same rates of fare over their roads, viz., according to the technical rules the California Pacific Railroad Company, and other railroad companies issue to their agents, they claim the right to refuse, and do refuse to check the trunk, valise, or baggage of any common passenger, such as student or lawyer, if their trunk or valise contains any book that it may be necessary for the student to take to school, or an attorney to take to Court with him.

Said railroad company also claim the right to refuse to check, and do refuse to check or carry, the trunks or valises of any doctor, surgeon, or dentist, if they have in their trunk or valise any drugs, apparatus, or instruments necessary for them to take with them when visiting their patients. This is unjust and unreasonable discrimination against surgeons, doctors, and dentists, when, on professional business, they have to travel as passengers on railroads. Because

said California Pacific Railroad and other railroads allow the class of passengers they call "commercial and business traveling agents," to carry anything they choose, and will check and carry for them the very kinds of instruments and apparatus as baggage, when they contain nothing else, that they refuse to check or carry in the trunk or valise of a doctor, surgeon, or dentist, when they have in their trunks or valise only the instruments or apparatus absolutely necessary for them to take with them, and on which the life of their patients may depend.

The California Pacific Railroad and other railroads claim the right to refuse to check, and do refuse to check, the trunk or valise of common passengers who may have in their trunks or valise any articles of merchandise, specimens, or curiosities; also the trunk or valise of any artisan, mechanic, or merchant, if they contain any of their tools or implements of trade, or parcels of goods or materials necessary for them to take with them as passengers. But said railroads discriminate against these and allow the class of passengers they call "commercial and traveling agents" to carry their trunks full of such things, and check and carry the trunks containing them as baggage, but refuse these same privileges and rights to mechanics, artisans, and others, who pay the same rates of fare as passengers, and want to carry such things in their trunks as baggage. (See Definition II (n), page 7, California Pacific Railroad Company's Rules of Baggage Department.)

This complainant asks this honorable Board of Railroad Commissioners that they make an "order" and such regulations as will compel the said California Pacific Railroad Company and other railroad companies to obey Section 21 of the Constitution of California, and prevent the discrimination now made in checking the baggage of passengers paying the same rates of fare over the same lines of railroads.

W. H. ROBINSON.

STATE OF CALIFORNIA, COUNTY OF SOLANO—ss.

Personally appeared before me, William Wolf, a Notary Public in and for said Solano County, the complainant, W. H. Robinson, who, having been duly sworn, says that he is the complainant, and that all matters therein stated as known to this complainant are true, and so far as this complaint purports to the matters of belief, he believes them to be true and correctly stated.

Witness my hand and official seal, this first day of August, A. D. 1881.

[SEAL.] WILLIAM WOLF, Notary Public.

Indorsed: Filed in office Railroad Commissioners; received August 1, 1881. Acknowledged. W. H. Robinson. Referred by the Board to A. N. Towne, General Superintendent C. P. R. R., August 2, 1881, and to the Attorney-General for his written opinion in the matter.

ANSWER OF A. N. TOWNE.

CENTRAL PACIFIC RAILROAD COMPANY,
GENERAL SUPERINTENDENT'S OFFICE,
SAN FRANCISCO, September 23, 1881.

W. R. ANDRUS, ESQ., *Secretary Board of Railroad Commissioners:*

SIR: Agreeably to your request, I return you herewith the complaint of Mr. W. H. Robinson, which I have examined carefully, and also a voluminous correspondence, embracing over six thousand words, which has grown out of this seeming misunderstanding on the part of Mr. Robinson.

The gentleman evidently does not understand the proper definition of the word "baggage," and our position and practice under the laws, notwithstanding we have endeavored to make it clear that "baggage" consists of articles intended for the use of the passenger, or for his personal equipment while traveling. Webster's definition is: "The trunks, carpet bags, valises, bandboxes, etc., used to contain clothing and other necessaries or conveniences which a traveler carries with him on a journey."

The law does not contemplate, neither do we provide for checking as baggage the tools or kit of a blacksmith, a carpenter, a shoemaker, or others. Neither does the law require the railroad company to receive and check dental tools owned by professional gentlemen, from which has originated this misunderstanding on the part of Mr. Robinson.

I understand that it has been the gentleman's custom to travel from place to place through the country in the practice of his profession, and our agent had reason to believe that his tools were packed with his baggage. And, as convincing proof, the gentleman absolutely refused to expose the contents of his trunk, which would be checked without hesitation if the agent could be satisfied that it contained nothing but ordinary baggage. The evidence also goes to show that the gentleman has borrowed tickets of other passengers with the evident intention of deceiving the agent as to the number of passengers to accompany the baggage.

Should the Commissioners express a desire to know anything more of this matter, I will gladly furnish them with all the evidence we possess.

Very respectfully,

[Signed:] A. N. TOWNE, General Superintendent.

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I, W. R. Andrus, Secretary of the Board of Railroad Commissioners of the State of California, hereby certify that the above is a true, full, and perfect copy of answer which was filed in this office September 26, 1881.

Indorsed: Copy of answer of the C. P. R. R. Co. to W. H. Robinson's complaint.

OPINION OF ATTORNEY-GENERAL HART.

OFFICE OF THE ATTORNEY-GENERAL OF THE STATE OF CALIFORNIA,
SACRAMENTO, April 11, 1882.

To the honorable Railroad Commissioners of California:

DEAR SIRS: The complaint of W. H. Robinson, of Suisun, presented to your honorable Board, and by you submitted to me for my opinion, has been duly considered. The charges contained in that complaint, though quite numerous, may be placed under two general classifications, viz.:

First—A charge for refusal to carry baggage upon what in the complaint is designated a "coupon ticket."

Second—A number of charges for refusal, on the part of the railroad company, to carry packages as baggage, until its agents had been permitted, by inspection, to ascertain whether the articles contained in them were of such a class or kind as that, under the rules and regulations of the company, they could be properly called "baggage," and transported as such.

These acts on the part of the company are complained of as being discriminations against the said Robinson, for which the complainant asks for damages, and also for the establishment by your honorable Board of rules for the government of the said company, preventing the repetition of the alleged wrongs.

The question submitted to me is whether your honorable Board has jurisdiction of the matter set out in the complaint—whether you have the power to grant the relief prayed for, and whether the term "baggage" or "luggage" can be said to include the "dental instruments" mentioned in the complaint.

It does not clearly appear what is meant in the complaint by a "coupon ticket," but it may fairly be assumed that such a ticket is sufficient to entitle the person purchasing it to carriage between the points designated upon it. Nor does it appear from the first count in the complaint what the luggage offered consisted of, nor what it weighed. Our statute requires every common carrier of persons, unless his vehicle is fitted for the reception of persons exclusively, to carry not to exceed one hundred pounds of luggage of a certain description. Such luggage, however, must be of the kind designated in the law. (Civil Code, Secs. 2180, 2181.)

If, therefore, his luggage, mentioned in the first count of his complaint, was of the kind and weight mentioned in these two sections, then the refusal, without assigning any reason, to transport it, was a violation of law for which he is entitled to relief in an action at law for damages, but such facts should be made to appear by proper averment. For such a violation of law, it is also my opinion that you may hear and determine the complaint, under the provisions of section twenty-two, of article twelve, of the Constitution.

Upon the question as to what constitutes luggage the law is clear:

Section 2181 of the Civil Code provides that luggage may consist of any articles intended for the use of a passenger while traveling, or for his personal equipment. Under no circumstances could that term as defined in that section be construed to include the instruments of a dentist or physician, the implements of an artisan, or the professional library of a minister or lawyer. Such articles are not intended for the use of a person while traveling, unless he intends to become an itinerant in his profession or trade, and to convert the car in which he rides into a traveling office or business place.

The general rule is that a common carrier is only bound to carry, free of charge, ordinary baggage, such as gentlemen and ladies and children ordinarily require for personal use while on a journey. This rule will be found to be fully sustained by all the works upon the subject. An examination of the opinion of the Supreme Court of the United States in the case of N. Y. C. and H. R. Railroad Company vs. Fraloff, 9 Cent. L. J. 432, will prove entirely sufficient to set this question at rest.

And it is also my opinion that in the absence of any legislation upon the subject, and of any rules adopted by your Board, it is entirely competent for the company to refuse to receive packages as luggage until its agents have been shown that those packages are composed of articles entitled to free transportation, and that such matters are ordinarily subjects to be controlled by proper and reasonable regulations to be made by the company itself. The power to make such regulations is discussed in the case above referred to, and also in the case of Hollister vs. Nowlen, 19 Wend. 234. It would seem that such right on the part of the carrier is absolutely essential to his or its protection against imposition by travelers.

I have the honor to be,

Yours respectfully,

A. L. HART, Attorney-General.

Indorsed: Filed April 12, 1882.

NOTE—The above complaint was dismissed by the Board of Railroad Commissioners on the opinion of the Attorney-General.

RESOLUTIONS ESTABLISHING SCHEDULES.

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RESOLUTIONS.

RESOLUTION OF THE BOARD OF RAILROAD COMMISSIONERS ESTABLISHING A SCHEDULE OF TARIFF RATES FOR TRANSPORTATION OF PASSENGERS AND FREIGHT ON RAILROADS IN THIS STATE.

OFFICE OF THE BOARD OF RAILROAD COMMISSIONERS
OF THE STATE OF CALIFORNIA,
320 Sansome Street, San Francisco.

I, W. R. Andrus, Secretary of the Board of Railroad Commissioners of the State of California, hereby certify that the following is a true, full, and perfect transcript and copy of the proceedings of said Board, as far as the same relate to the fixing, establishment, or adoption of rates for the transportation of freight and passengers by the railroads of the State of California, as such proceedings appear of record on pages eighty-six to eighty-nine, inclusive, of the record of proceedings of said Board:

OFFICE OF THE BOARD OF RAILROAD COMMISSIONERS,
SAN FRANCISCO, May 11, A. D. 1881.

Board of Railroad Commissioners convened pursuant to adjournment, at eleven o'clock A. M. Present: Commissioners Cone, Beerstecher, and Stoneman.

The pending resolution, to establish a schedule of tariff rates for transportation of passengers and freight on railroads in this State, was taken up for consideration, and adopted by the Board in form as follows, by the following vote:

Commissioner Cone.....Aye.
Commissioner Beerstecher.....Aye.
Commissioner Stoneman.....Not voting.

Resolved by the Board of Railroad Commissioners, That the attached revised schedule of freight go into force and effect on the first day of June, 1881, on the several railroads within this State upon whose line of road the places named in the schedule are situated, and that such rates take the place of the rates now on file in the office of this Board, and now in force on the several railroads, for the transportation of the articles named, and between the places named. And that on and after the first day of June, 1881, it shall be unlawful to demand or receive rates in excess of the rates so fixed and established, and if, through any error, a rate for carriage of freight appears in the schedule in amount in excess of present rates, then present rates shall prevail until changed by this Board. The rates now in force for transportation of passengers and carriage of freight on the following named railroads, as modified and changed by the attached schedule, viz.: The Central Pacific and its leased lines, California Pacific, California Pacific and Northern, Stockton and Copperopolis, Placerville and Sacramento Valley, Sacramento and Placerville, San Pablo and Tulare, Southern Pacific, Southern Pacific Northern Division, South Pacific Coast, Vacaville and Clear Lake, Nevada County Narrow Gauge, San Francisco and North Pacific, Sonoma Valley, North Pacific Coast (other than passenger rates to and from San Rafael and San Francisco, and between said points), are hereby adopted, fixed, and established as the present rates of this Board, and the maximum of rates lawful for said railroad companies to demand and receive on and after the first day of June, 1881, subject to such further and such other changes, after due notice, as to this Board will seem just and reasonable.

Commissioner Beerstecher then offered the following resolution:

Resolved by the Board of Railroad Commissioners, That the Bailiff of this Board proceed at once to notify the several railroad companies, whose rates have been this day revised, fixed, adopted, and established, of the action of this Board. That the notice consist of a certified copy of the resolutions and schedule of rates; that such notice be served personally on the proper officers of each railroad company.

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RESOLUTION OF THE BOARD OF RAILROAD COMMISSIONERS ESTABLISHING A SCHEDULE RATE FOR TRANSPORTATION OF PASSENGERS ON ALL RAILROADS IN THIS STATE.

OFFICE OF THE BOARD OF RAILROAD COMMISSIONERS
OF THE STATE OF CALIFORNIA,
320 Sansome Street, San Francisco.

I, W. R. Andrus, Secretary of the Board of Railroad Commissioners of the State of California, hereby certify that the following is a true, full, and perfect transcript and copy of the proceedings of said Board as far as the same relate to the fixing, establishment, or adoption of rates for the transportation of passengers by the railroads of the State of California, as such proceedings appear of record on pages one hundred and nineteen to one hundred and twenty-three inclusive, of the record of proceedings of said Board (resolution and schedule of tariff rate), viz.:

OFFICE OF THE BOARD OF RAILROAD COMMISSIONERS,
SAN FRANCISCO, September 28, 1882.

Board of Railroad Commissioners convened pursuant to adjournment, at 3 o'clock P. M. Present, Commissioners Cone and Stoneman.

The pending resolution, No. 35, to establish a schedule rate for transportation of passengers on all railroads in this State, was taken up for consideration by the Board, and adopted in form, as follows, by the following vote:

Commissioner Cone.....Aye.
Commissioner Stoneman.....Aye.

Resolved, That the maximum rate for transportation of passengers on all railroads in this State shall be four (4) cents per mile per passenger.

Second—In fixing the rate of fare for passengers, the distance shall be estimated at the nearest whole number of miles, and the charges shall be estimated at the nearest multiple of five cents.

Third—This rate for transportation of passengers shall go into effect on and after the first day of November, 1882.

Commissioner Cone then offered the following:

ORDERED BY THE BOARD OF RAILROAD COMMISSIONERS.

First—That one printed copy of the resolutions establishing a rate for transportation of passengers upon all the railroads of this State, as adopted by the Board of Railroad Commissioners on the twenty-eighth day of September, 1882, under the seal of the Board, and signed by the Secretary, be served by the Bailiff of the Board, personally, upon either the President, Vice-President, Secretary, or Managing Agent of each and every railroad company upon whose line of road such tariff rate takes effect.

Second—That such summons notify such railroad company to appear and answer, and show cause, if any there be, before the Board of Railroad Commissioners of the State of California, at its office, No. 320 Sansome Street, in the City and County of San Francisco, State of California, within fifteen days from the day of service of such summons, together with a printed copy of the resolutions as aforementioned, why such resolutions and rate should not be established, and published by the Board of Railroad Commissioners; and why such railroad company should not be served with a printed copy of the resolutions, pursuant to the Constitution, and to Section 11 of Chapter LIX of the Statutes of California, passed at the twenty-third session of the Legislature of the State of California, styled "An Act to organize and define the powers of the Board of Railroad Commissioners," approved April 15, 1880; and why such resolutions and rate should not go into force and effect on the twentieth day after service, pursuant to the provisions of Chapter LIX aforesaid.

Which resolution was adopted by the following vote:

Commissioner Cone.....Aye.
Commissioner Stoneman.....Aye.

The Board then adjourned to meet on Tuesday, the seventeenth day of October, 1882, at 11 o'clock A. M.

PROTESTS AND ANSWERS

OF THE

SEVERAL RAILROAD COMPANIES.

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PROTESTS AND ANSWERS.

Protests and answers to Resolutions Nos. 35 and 36, against the enforcement of Resolution No. 35, from the several railroad companies, as follows, to wit:

SAN FRANCISCO, November 17, 1882.

To the honorable Board of Railroad Commissioners of California:

GENTLEMEN: The Bodie and Benton Railway and Commercial Company respectfully protests against any reduction of passenger and freight rates as applied to its road, and represents:

That the road has been constructed from Bodie, in Mono County, to the Mono Sawmills, a distance of thirty-eight miles, and has been operated during the season of 1881 and 1882 in the transportation of wood and lumber from said sawmills to the town of Bodie, and it is now in contemplation to extend its line to the town of Benton, in Inyo County, where a connection will be made with the Carson and Colorado Railroad.

That the cost of construction of the portion of said road heretofore completed has been very great, owing to the difficulty of getting railroad material on the ground and the mountainous character of the country through which it runs.

That the traffic is limited to the wood and lumber trade, and the company has no market for its lumber and wood aside of the mining camp of Bodie.

That owing to the cost of building and the limited amount of business, the company is not able to conduct its operations with any profit at less than that now allowed by law, and any reduction will embarrass the company and absolutely prevent the construction of its intended extension.

Your petitioner therefore asks that no change be made in the present rates.

THE BODIE AND BENTON RAILWAY AND COMMERCIAL COMPANY.
By its President, R. N. GRAVES.

Indorsed: Filed November 17, 1882.

CENTRAL PACIFIC RAILROAD COMPANY AND LEASED LINES,
OFFICE GENERAL MANAGER, SAN FRANCISCO, November 16, 1882.

Honorable Board Railroad Commissioners of California:

GENTLEMEN: The summons and copy of resolutions establishing passenger rates for the following railroads, viz.: Central Pacific, California Pacific, Sacramento and Placerville, Stockton and Copperopolis, San Pablo and Tulare, Los Angeles and San Diego, Los Angeles and Independence, Northern Railway, Berkeley Branch, and Southern Pacific south of Goshen, were served on me at 10:30 A. M., October 2, 1882, and I address you this communication in obedience to the summons to appear before your honorable Board within fifteen days, to answer and show cause, if any there be, why such rates should not be established.

The adjustment of rates involves the most important interest of the companies, as well as of the community. The fixing of rates, as proposed, will materially reduce our earnings, and right here, you will permit me to say, there is nothing so essential to our welfare as revenue; it is at that vital point you strike, depriving the company of its ability to earn, without making provision for a corresponding reduction in expenses, which, from our inability to obtain fuel, supplies, etc., at a less price, can only come by inferior, and less frequent accommodations to the public, and reductions in the wages paid employés, many of whom are located, with families dependent upon them, where the cost of living is very high.

The amount between the current rates and those you propose will scarcely be felt or appreciated by the individual, but it will, in the aggregate, materially injure, and the small roads to an extent which I am unable now to say.

Your honorable Board cannot be unmindful of the great and important benefits in general conferred upon the people of California by the construction of our roads, and particularly by the special concessions made by the companies in the sweeping reductions in local rates during your term of office.

I am unable at this time to give you the reductions upon all articles, but upon some of the products of California, moved to the general market, such as barley, beans, brandy, calves, cattle, corn, flour, green fruit, hogs, hops, horses, mill stuff, oats, potatoes, rye, sheep, wine,

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wheat, and wool, based on the tonnage of the year 1881, compared with 1879, there has been a reduction of 18.67 per cent; in 1881, compared with 1879, of 22.69 per cent, showing a saving to the people in round numbers of $588,800 74, and on the Central Pacific's proportion of through freight charges for the two years of 1880 and 1881, as compared with 1879, there was a reduction of $1,428,798 87, which added to the reduction of local freight, shows in the aggregate, $2,017,599 11.

In other words, if the rates charged in 1879 had been applied to the articles mentioned, which were moved in 1880, the total charges would have been $221,889 17 more than was collected, and if the rates of 1879 had been applied to the same articles during 1881, the total charge would have been $367,411 57 in excess of what was collected; showing for 1880 and 1881, compared with 1879, a gross reduction of freight upon the few articles shown as named above.

Again, if the rates charged by the Central Pacific for its service for through freight, *i. e.*, freight interchanged with the Eastern States during 1879, had been applied to the tonnage carried during the years 1880 and 1881, the total charge would have been $1,428,798 37 in excess of what was collected; thus showing that the amount of reductions upon the products of the State and upon imports and exports by rail during the years 1880 and 1881, aggregate more than two million dollars—an average of more than one million dollars per annum, the exact total being $2,017,599.

Passenger rates have been also materially reduced, an aggregate of which I regret exceedingly I am unable to give you, but I am satisfied they would more than equal the figures given for the freight traffic.

Many reductions were made extending over the different portions of the system; the latest one, in some cases, covering or overlapping territory embraced in former reductions, showing that the reduced rates have been established at different times during the period since 1878 up to and including the last two months of this year, as follows:

For the year 1878, extending over 800 miles of road, a reduction of 29.5 per cent.

For the year 1879, extending over 1,000 miles of road, a reduction of 27.8 per cent.

For the years 1880 and 1881, and the first six months of the current year, extending over 1,050 miles of road, a reduction of 25.7 per cent.

For the months of August and September of the present year, over 300 miles of road, a reduction of 29.5 per cent.

All within the State of California, which, from the schedule, you will see applies to the roads more especially of which the business is heavy and the thickly settled portions of the system, which are less mountainous and less costly of construction and maintenance.

Itemized statements, showing the localities of each and every reduction in passenger and ticket rates, have been furnished the preceding and existing Boards of Railroad Commissioners, to which reference can be made for verification of the above percentages.

There is another important fact that should not be overlooked, viz.: by the proposed rates you are not only doing great harm to the company within the State, but beyond and far-reaching.

This change of schedule in California will affect the Central Pacific Railroad all through Nevada and Utah, as far east as Ogden; the Southern Pacific and connections all the way through the great Territories of Arizona, New Mexico, and east thereof into the State of Texas, to a station called Lozier, 1,644 miles from San Francisco.

To know the full extent of the injury to the Central Pacific road, we have, at much trouble and expense, worked our clerical forces on the passenger business for the month of May, 1882, which shows a loss for that one month alone, in applying the four-cent rate per mile, of $34,610 15, or 19.96 per cent reduction.

From what has already been shown to your honorable Board, the great injury to the property which I represent, more than 52 per cent of the mileage of which has not yet earned a farthing on its capital, will be readily apparent.

No one will dispute the fact that the owners of this property are entitled to a fair compensation for its use.

For the reasons above given, and for others of which your honorable Board is advised by proof already on file with you, the companies which I represent respectfully protest against the passage of the resolution in question.

Of all the facts hereinbefore stated or referred to, the companies will make due proof at such times as they may be advised that your honorable Board is ready to consider the matter.

All of which is respectfully submitted.

Yours, truly,

A. N. TOWNE, General Manager.

Indorsed: Filed November 17, 1882.

BEFORE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

In the matter of the resolution of said Board of September 28, 1882, "That the maximum rate for transportation of passengers on all railroads in this State shall be four (4) cents per mile per passenger."

Now comes N. D. Rideout and Nicholas Luning, and without service of summons appear before the Board and show:

That they are the owners of the railroad running from Marysville, in Yuba County, to Oroville, in Butte County, in this State, and the rolling stock of said road, and have been so tenants in common the owners thereof for more than one year. That their said railroad is twenty-six and one half miles in length, and has three stations, one at each terminus of the road, and one at Howard, about half way between the two. That the country between Oroville and Marysville is sparsely populated, and furnishes very little business for the road, either in the way of passengers or freight.

And they further say that the ten months of the current year from the first day of January to the thirty-first day of October, 1882, at the rate of two dollars fare for each passenger over the entire road, and one dollar from Howard either way, or a fraction more than seven and one half cents per mile, the entire receipts from passenger fares on said road have been $13,674 28, or an average of $1,367 42 per month, and that the expense of one passenger train per day each way over their said road has been about $1,000 per month, leaving as the net income from passenger fares over expenses less than $400 per month with fares at seven and one half cents per mile.

And they further say that the gross earnings from all services on said railroad from the first day of March, 1882, were only $3,979 79 over and above the expense, including taxes for State and county purposes, which were for that year $3,479 81, or nearly equal to the gross net receipts of the road.

And they further say that the rate of four cents per mile for transportation of passengers over their road, the entire receipts from passengers' fares will not pay the running expense incurred. That they cannot reasonably expect an increase in their number of passengers. That for the last ten months their gross receipts have, as before stated, averaged $1,367 42 per month, or $45 58 per day, and $22 79 for each passenger train run over the road.

They therefore ask that their said California Northern Railroad may be exempted from the said order of September 28, 1882, and from any order that may be hereafter made regulating passenger fares on the railroads of the State.

I. S. BELCHER,
Attorney for N. D. Rideout and N. Luning.

STATE OF CALIFORNIA, CITY AND COUNTY OF SAN FRANCISCO—*ss.*

A. J. Binney being first duly sworn, says he is, and since the first day of March, 1881, has been the Superintendent, and had the entire charge of the California Northern Railroad, and has kept the books of account of said road for N. D. Rideout and Nicholas Luning, and that the matters stated in the foregoing answer are within his own personal knowledge, and that he therefore makes this verification on behalf of said Rideout and Luning; that he has read the foregoing answer and knows the contents, and that the same is true of his own knowledge.

ANDREW J. BINNEY.

Subscribed and sworn to before me this seventeenth day of November, A. D. 1882.

SAMUEL S. MURFEY, Notary Public.

Indorsed: Filed November 17, 1882.

To the honorable Board of Railroad Commissioners of the State of California:

GENTLEMEN: On behalf of the Carson and Colorado Railroad Company, Third Division, I beg to present the following facts, briefly, to show cause why your honorable body would not be justified in reducing the present legal rate of passenger traffic from ten cents per mile as applied to the railroad in question.

This line is now in progress of construction, connecting with the Central Pacific Railroad at Reno, in the State of Nevada, and running from thence in a southeasterly direction some two hundred miles to the State line of California, near Benton, Inyo County, where a large force of graders and track layers are now at work extending the line through Inyo County, with the intention and expectation of making connection with the Southern Pacific Railroad at Mojave, a point some two hundred miles southeast of Benton, in Kern County, thus forming a connecting link between the Central Pacific and Southern Railroads, and thereby opening up a section of new country hitherto entirely devoid of railroad or other transportation facilities, excepting such as may be offered by poor and inefficient stage lines, over miserable roads, through a mountainous country interspersed with dry alkali deserts, and a conveyance rendering passenger and freight traffic slow and very expensive.

In consequence of all this the trade of this section of country—its mining and agricultural industries—are dead, the population very small in number, occupying a few hamlets and villages many miles apart, and greatly scattered. As previously stated, some two hundred miles of this road have been completed and in working order to near the State line of California—built through a desert country at great cost, and the little passenger business now offering is being done for less than half the charges of stage lines previously in operation, and the time between points reduced to one fourth it formerly required.

The portion of the road completed in Nevada has been a great benefit to the people along its line, and they are perfectly content with the passenger rates exacted, viz.: ten cents per mile.

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Population is daily following into its borders, business is rapidly increasing, and that section, formerly the poorest in the State, is now one of the best—results to be attributed entirely to the building of this road, and from no other cause whatever. The same result will surely be obtained in Inyo and Kern Counties when the road is completed through Owen's Lake Valley country; but I may say, right here, that in the event of your honorable Board deeming it wise to cut down the present legal passenger rates, that it would be impossible for this company to extend its road any further, although very desirous to do so. Under this state of facts I earnestly hope your honorable body will not reduce such passenger rates, so far as this road is concerned; and, as in duty bound, your petitioner will ever pray.

CARSON AND COLORADO RAILROAD COMPANY.
By its President, H. M. YERINGTON.

Indorsed: Filed November 17, 1882.

SUPPLEMENTAL STATEMENT MADE BY D. A. BENDER, SECRETARY. (Filed November 22, 1882.)

To the honorable Board of Railroad Commissioners of the State of California:

GENTLEMEN: In addition to the protest filed before your honorable body, on the seventeenth instant, by Mr. H. M. Yerington, the President of the Carson and Colorado Railroad Company, for whom I appear to-day, I beg permission to submit some additional facts in the way of protest against the enforcement of the order in question.

The passenger tariff rates of the first division of the Carson and Colorado Railroad (a Nevada incorporation), now, and for nearly ten months past, in operation from Mound House, Nevada, to Candelaria, in Esmeralda County, Nevada, a distance of one hundred and eighty miles, are nine cents per mile.

We receive lower rates (six cents) from through passengers in connection with the stage lines, over which we sell tickets to points reached by connecting stages.

From all members of conventions, grand lodges, teachers institutes, and similar organizations, State and county fairs, we charge half first-class rates.

The above rates have produced a revenue during the ten months of the present year, ending October third last, of $68,695 48, from 14,609 passengers, a monthly average of 1,460 passengers, and $6,869, $4 70 per passenger (nearly fifty passengers per day), from a daily train each way between the Mound House and Candelaria, a distance of fifty-eight miles; and, also, from a construction train running between Belleville and the present end of the track, twenty-five miles.

On or about the first of January next our company will put in operation about forty miles of road between Belleville, in Esmeralda County (eight miles of Candelaria), and Benton, in Mono County, California. Between these points there is scarcely any population; in fact, that portion of Mono County through which our line will run contains not to exceed two hundred or three hundred inhabitants.

During the present year our trains have connected at Belleville with a daily stage line running to Benton, Bishop Creek, Big Pine, and Independence, settlements which will all be reached by our railroad during the coming year, and as an indication of the present depressed and deplorable condition of business in that section, I will say that during such ten months our company sold over said stage line to the places mentioned but forty-four tickets, and received from such stage line forty-six passengers en route to Sacramento and San Francisco—an average of four and a half passengers each way monthly.

I have here a table, furnished me from the State Controller's office, giving the property (taxable) valuations of Inyo County, California, for years 1878–1881, showing that there has been from the year 1878 a constant deterioration in the taxable property of the county. Also, a showing of the property valuation of Esmeralda County, Nevada, similarly situated with Inyo as to difficulty of access. Esmeralda County shows an increase of valuations since our road has penetrated it, and we have every reason to believe that the building of our road through Inyo County will bring about a decided change for the better.

No complaints have been made by the inhabitants of Mono and Inyo Counties that the present maximum rates for passengers are too high, or in any way out of proportion to the value of the services performed. This maximum will reduce the present rates by stage fully fifty per cent, beside giving that comfort and expedition which railroad transportation always gives over that by stages.

The Carson and Colorado Railroad Company having its northern terminus at Mound House station, in Lyon County, Nevada, distant nearly three hundred miles by railroad from San Francisco, has not the advantage of the great water highways of the Pacific Coast, and is therefore compelled, by its isolation, to pay much higher prices for all of the supplies which enter into the cost of operating a railroad line. For these reasons, the Carson and Colorado Railroad respectfully and earnestly protests against the passage of the order now before your honorable body, and believes that such passage and enforcement would work great injury to its interests, and would retard, if not entirely prevent, the future prosecution of its work of railroad building through the country above mentioned, and would therefore work untold injury upon the best interests of the inhabitants of such country, retarding its progress for many years to come.

Respectfully submitted.

CARSON AND COLORADO RAILROAD COMPANY.
By D. A. BENDER, Secretary.

In the matter of the People of the State of California ex rel. Board of Railroad Commissioners, Plaintiff, vs. California Southern Railroad Company, Defendant.

The California Southern Railroad Company, defendant, answering the summons in the above entitled matter, says:

That an arbitrary maximum rate per mile for the transportation of passengers over the several lines of railroad in this State is inequitable and unjust. That a maximum rate of four (4) cents per mile per passenger is insufficient to pay the cost of transportation of passengers over its road. That its road between its terminus at National City and the junction with the Southern Pacific Railroad at Colton, is constructed through a sparsely settled country, and that the present passenger traffic, under its established tariff of about five (5) cents per mile per passenger, does not pay the expense of handling it.

Wherefore the defendant prays the order of your honorable Board, fixing the maximum rate for the transportation of passengers at four (4) cents per mile per passenger, be vacated so far as to affect the defendant.

CALIFORNIA SOUTHERN RAILROAD COMPANY.
By HENRY E. COOPER, its Attorney.

Indorsed: Filed November 16, 1882.

BEFORE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

The People of the State of California ex rel. the Board of Railroad Commissioners of the State of California, Plaintiff, vs. the North Pacific Coast Railroad Company, Defendant.

NOVEMBER 17, 1882.

Now comes the North Pacific Coast Railroad Company, and answering and showing cause as required by the Board of Railroad Commissioners why the resolution establishing a rate for transportation of passengers over the railroads of the State of California as adopted by said Board on the twenty-eighth day of September, A. D. 1882, should not be established and published by said Board and go into force and effect on the twentieth day after service of a printed schedule of such resolution and rates, respectfully represent as follows:

That it has caused to be carefully compiled the passenger rates collected by the said North Pacific Coast Railroad Company during the first six months during the year 1882, and the result thereof is as follows: During said period said company transported over its main line 7,631 passengers, who traveled an aggregate of 373,503 miles. That the rate paid by said passengers averaged 4.07 cents per mile. That the railroad of said company passes through a sparsely populated country, and is unusually expensive to operate owing to the high grades, sharp curves, and trestlework and bridges requiring constant repairs. That for the purpose of encouraging passenger traffic the said company has put its rate at the very lowest point. That said road has been in operation about eight years, during a great portion of which time it failed to pay operating expenses and interest on its floating debt, and has only recently passed into the control of assignees of its creditors. That this company, in view of these circumstances, protest against any change or reduction in the rates of fare now established and collected by this company. That the proposed reduction if made will compel this company to abandon the carrying passengers or to operate its road at a loss.

The above computation does not include local and ferry fares from passengers, for the reason that the same have been heretofore put at a rate lower than proposed by your honorable Board, and do not of themselves afford a paying return to this company, but have been maintained in the hope of encouraging settlement of families and others in the surburban district through which this company's road passes.

And this company further shows, that there is not at the present time any dissatisfaction on the part of the public with the management of its business, or the rates of fare or freight charged by this company; that it has on various occasions met representatives of the inhabitants of Marin County, through which its said road passes, and explained its condition, and that the people of Marin County are well satisfied that the company is operating its road at the lowest possible charges for transportation of passengers and freight.

Wherefore, this company prays that said resolution, adopted as aforesaid, establishing a rate for transportation of passengers over the railroads of the State of California, may be rescinded, or that this company be excepted from the companies to which said rate may be eventually applied.

Respectfully submitted.

THE NORTH PACIFIC RAILROAD COMPANY.
By DAVID NYE, General Superintendent.

W. H. L. BARNES, of Counsel.
Indorsed: Filed November 20, 1882.

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NEVADA COUNTY NARROW GAUGE RAILROAD, SUPERINTENDENT'S OFFICE,
GRASS VALLEY, November 16, 1882.

To the honorable the Board of Railroad Commissioners of the State of California:

GENTLEMEN: On behalf of the Nevada County Narrow Gauge Railroad Company I hereby enter a protest against any reduction of the passenger tariff now in force on said road, under "special charter granted by the State of California," and submit the following affidavit, viz.: That our passenger travel is not paying expenses, that a reduction of said tariff would not increase the number of passengers, and that should said reduction be enforced we would be compelled to withdraw our passenger trains.

JOHN F. KIDDER, General Superintendent.

STATE OF CALIFORNIA, COUNTY OF NEVADA—*ss.*

John F. Kidder, being first duly sworn, deposes and says that he is the Superintendent of the Nevada County Narrow Gauge Railroad Company, and that the matters contained in the foregoing protest are true.

JOHN F. KIDDER.

Subscribed and sworn to before me this sixteenth day of November, 1882.

[SEAL.]

CHARLES W. KITTS,
Notary Public, Nevada County, California.

SUPPLEMENTAL STATEMENT. (Filed November 22, 1882.)

To the honorable the Board of Railroad Commissioners of the State of California:

GENTLEMEN: I respectfully submit the following statement as an addition to the statement and protest heretofore filed by me:

Mileage of passenger trains on the Nevada County Narrow Gauge Railroad:

August, 1882	4,510 miles.
September, 1882	4,461 miles.
October, 1882	4,322 miles.
From the first to the fifteenth of November, 1882	2,297 miles.

Total receipts from passenger traffic on said road:

August, 1882	$3,157 65
September, 1882	3,263 52
October, 1882	3,008 50
From the first to the fifteenth of November, 1882 (inclusive)	1,301 48

JOHN F. KIDDER, General Superintendent.

STATE OF CALIFORNIA, CITY AND COUNTY OF SAN FRANCISCO—*ss.*

Sworn and subscribed to before me on this twenty-second day of November, 1882.

J. S. CONE,
Railroad Commissioner, First District.

CITY AND COUNTY OF SAN FRANCISCO, STATE OF CALIFORNIA—*ss.*

The People of the State of California ex rel. the Board of Railroad Commissioners of the State of California, Plaintiff, vs. The Sonoma Valley Railroad Company, Defendant.

Answering the summons in the above entitled matter, issued on the thirtieth day of September, 1882, the defendant says:

1. The maximum rate fixed by the said resolution is inequitable and unjust to defendant.
2. That no uniform rates for all roads in this State can justly be established.
3. That it would be impossible for defendant to make the necessary exhibits and showing to this honorable Board, as required by the summons, without first ascertaining the kind of evidence admissible.

Wherefore, the defendant prays that the matter be continued, and that such order or orders be made in the meantime as may be just in the premises.

Respectfully, etc.,

JAMES A. JOHNSON,
Attorney for Defendant.

EXHIBIT A—SONOMA VALLEY RAILROAD.

Total gross earnings, 1881	$48,475 43
Total expenses, 1881	56,504 97
Total net loss, 1881	8,029 54
Percentage on capital stock, without deduction for depreciation by wear and tear	.04 1/100
Total gross earnings	48,475 43
Total gross passenger earnings	21,168 45
Percentage of passenger earnings to gross earnings	.43 64/100
Total freight earnings	27,306 98
Total passenger earnings	21,168 45
Percentage of passenger earnings to freight earnings	.77 52/100

Indorsed: Filed October 17, 1882.

CITY AND COUNTY OF SAN FRANCISCO, STATE OF CALIFORNIA—*ss.*

The People of the State of California ex rel. the Board of Railroad Commissioners of the State of California, Plaintiff, vs. The San Francisco and North Pacific Railroad Company, Defendant.

Answering the summons in the above entitled matter, issued on the thirtieth day of September, 1882, and served on the defendant on the second day of October, 1882, the defendant says:

First—The maximum rate fixed by the said resolution is inequitable and unjust to defendant.

Second—That no uniform rates for all roads in this State can justly be established.

Third—That it would be impossible for defendant to make the necessary exhibits and showing to this honorable Board, as required by the summons, without first ascertaining the kind and character of the evidence admissible; therefore, defendant prays that the matter be continued, and that such order or orders be made in the meantime as may be just in the premises.

Respectfully,

JAMES A. JOHNSON,
Attorney for Defendant.

SUPPLEMENTAL EXHIBIT. (Filed November 22, 1882.)

San Francisco and North Pacific Railroad.

Total gross earnings, 1881	$446,972 37
Total expenses	268,150 87
Total net earnings	$178,821 50
Percentage on capital stock	.04 77/100
Total gross earnings	$446,972 37
Total gross passenger earnings	189,622 10
Percentage passenger earnings to gross earnings	.42 42/100
Total gross earnings	$446,972 37
Total freight earnings	204,800 81
Total passenger earnings	189,682 10
Percentage of passenger earnings to freight earnings	.92 59/100

Indorsed: Filed October 17, 1882.

SAN FRANCISCO, November 4, 1882.

To the honorable Board of Railroad Commissioners of the State of California, office 320 Sansome Street, San Francisco:

GENTLEMEN: A summons to the South Pacific Coast Railroad Company to appear before you to show cause why a maximum passenger rate of four cents per mile should not be established on the first day of November, 1882, was duly received.

In behalf of the company I represent, I would respectfully protest against the maximum rate named—

1. Because our revenue is not yet large enough to even yield a percentage on the capital invested. (See our report for 1881, page 18.)
2. The public rode on our line in 1881 12,450,900 passenger miles, at a revenue reported to you of $255,529 16, giving us in the grand average only two and five tenths cents per mile, notwithstanding our tariff rate may show for through travel about five cents, and for between stations about six cents.

It should be understood that a maximum per mile is impracticable, because rates depend

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upon the kind of service to be performed, volume, character, and distance, and besides, another factor is grades. C urvatures must also be considered in order to get an intelligent and just tariff of rates for the stockholders as well as the public to be served.

I would respectfully call the attention of your honorable Board that no general rule can be safely or justly applied to all roads within this State, from the fact that they were not built under the same conditions in any respect.

I believe the best interest of all the people would be best served by the further construction of competing lines, and good judgment would dictate that this could not be accomplished without at least a prospect of a fair return for the actual capital invested.

Very respectfully,

A. E. DAVIS,
President South Pacific Coast Railroad Company.

Indorsed: Filed November 9, 1882.

BEFORE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

The People of the State of California ex rel. the Board of Railroad Commissioners of the State of California, Plaintiff, vs. the San Joaquin and Sierra Nevada Railroad Company, Defendant.

SAN FRANCISCO, November 20, 1882.

The San Joaquin and Sierra Nevada Railroad Company, the defendant in the above entitled action, now makes its answer, and represents:

1. That it became a corporation on the twenty-eighth day of March, 1882, under and by virtue of the laws of the State of California.
2. That at the date hereof only thirty (30) miles of its intended line of railroad have been completed, to wit: from Brack's, on the South Fork of the Mokelumne River, to the town of Wallace, in Calaveras County.
3. That it has run regular passenger trains over said completed portion of its road during a period of less than sixty days prior to the date hereof.
4. That at this early stage of its operation as a passenger carrier the fixing of a maximum rate of fare of four (4) cents per mile to be charged by it would be unjust.

It therefore prays that the honorable Board of Railroad Commissioners of the State of California will dismiss the cause of action.

SAN JOAQUIN AND SIERRA NEVADA RAILROAD COMPANY.
By EDWARD F. STONE, Secretary.

Indorsed: Filed November 21, 1882.

BEFORE THE BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF CALIFORNIA.

The People of the State of California ex rel. the Board of Railroad Commissioners of the State of California, Plaintiff, vs. the Visalia Railroad Company, Defendant.

And now comes the defendant, the Visalia Railroad Company, and demurring to the summons and order to show cause, issued in the above entitled proceedings, alleges:

That the defendant is engaged in the business of transporting freight and passengers from the town of Visalia to the station on the Southern Pacific Railroad called and known as Goshen, and both situated in the county of Tulare, in said State; that the roadbed and track owned and operated by the defendant is seven and a half miles in length and no more; that the line of railroad operated, owned, and controlled by this defendant is not supported by any local traffic, neither in freight or passenger transportation, and the business of this defendant is confined exclusively to the transportation of the freight and passengers which are in the first instance transported and brought to said station of Goshen by said Southern Pacific Railroad Company; that the passenger business of this defendant is exceedingly limited at this present time, and that there are no prospects of such business being increased; that the town of Visalia is a small village and its population has not increased to any appreciable extent within the last five years, and that there are no indications that its population will increase to any appreciable extent within the next five years; that in transacting its passenger business this defendant is required and always has been required to make two trips daily over its road from said town of Visalia to said station of Goshen, and that there is no town at said station of Goshen, and that there is not now and there is no indications that there ever will be any to eall passenger business between said station of Goshen and said town of Visalia; that the following is a detailed statement correctly showing the full amounts received by this defendant from its passenger business from and including the month of June, 1881, to and including the month of August, 1882, to wit:

Received during June, 1881	$449 10
Received during July, 1881	489 75
Received during August, 1881	585 25
Received during September, 1881	526 95
Received during October, 1881	621 79
Received during November, 1881	568 85
Received during December, 1881	499 48
Received during January, 1882	391 84
Received during February, 1882	345 50
Received during March, 1882	458 95
Received during April, 1882	453 88
Received during May, 1882	422 90
Received during June, 1882	408 55
Received during July, 1882	481 10
Received during August, 1882	466 82

That the defendant has been and is now charging and collecting ten cents per mile for each passenger transported over its road; and that the above statement shows correctly the whole amounts received from passenger business for the period above stated, at about the rate of ten cents per mile for each passenger transported during said period. That the monthly expenses of operating said defendant's road for the period above stated are as follows:

Monthly payroll, current	$675 00
Fuel, monthly	180 00
Oil	50 00
Incidental expenses, monthly	50 00

And this defendant further shows that more than one half of the monthly expenses incurred by defendant in operating its road is caused and incurred by the transportation of passengers. And this defendant further shows that the road bolonging to it was originally constructed, and is now maintained and operated as an accommodation line to connect the said town of Visalia with the main through line running through the San Joaquin Valley, and not as an investment for pecuniary profit alone; that if the defendant is restricted and limited to the right and power to collect only four cents per mile for each passenger transported by it, its business of transporting passengers will be carried on at an actual loss; that four cents per mile for transporting passengers over the road of this defendant will be greatly disproportionate to the actual and reasonable value of such services, and that said rate will not be a just and reasonable rate for the transportation of passengers over defendant's said road. Wherefore this defendant prays that said order to show cause be dismissed, and that this defendant be allowed to go hence without day.

THE VISALIA RAILROAD COMPANY.
By S. SWEET, Secretary.

STATE OF CALIFORNIA, COUNTY OF TULARE—*ss.*

S. Sweet, being first duly sworn, doth depose and say that he is the Secretary of the Visalia Railroad Company, the defendant named in the foregoing answer; that he has heard read the foregoing answer and knows the contents thereof, and that the same is true of his own knowledge.

S. SWEET.

Subscribed and sworn to before me this sixteenth day of October, A. D. 1882.

[SEAL.] S. C. BROWN, Notary Public.

Indorsed: Filed October 17, 1882.

OFFICE OF THE VACA VALLEY AND CLEAR LAKE RAILROAD,
VACAVILLE, CALIFORNIA, November 17, 1882.

To the honorable the Board of Railroad Commissioners of the State of California:

GENTLEMEN: The undersigned, A. M. Stevenson, President of the Vaca Valley and Clear Lake Railroad Company, a railroad corporation under the laws of the State of California, hereby appears on behalf of said corporation, and protests against the adoption of the resolution now pending before your honorable Board, whereby it is proposed to reduce the rates of fare for passengers upon the railroad of said company, to a figure not exceeding four (4) cents per mile per passenger, upon the grounds:

1. That if the proposed reduction should be made, the said corporation will be unable to operate its said road, except at a loss upon the passenger traffic thereof.
2. That the present rates of fare of passengers upon said railroad are fair and reasonable, and are no higher than sufficient to afford said corporation a fair remuneration and moderate profit

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for the cost and expenses incurred by it in the performance of the transportation of such passengers.

3. That the interest of the community traversed by said railroad, and that of the public traveling thereon, are well subserved by the operation of said railroad at the rates of fare now charged by it. That there has been no complaint by any of the persons affected by said charges of their being excessive; but on the contrary, the persons living near the line of said railroad, and those traveling thereon, have been and now are satisfied with the present rates, and do not desire to have the same reduced.

4. That it is the express desire of the public generally, and of the business community through which said railroad passes particularly, that the said railroad should be extended beyond its present northern terminus at Winters to Clear Lake, believing that it will thus greatly enhance the prosperity of the region particularly affected thereby, and advance the interest of the public at large. That pursuant to such expression of opinion the said corporation has heretofore determined to make said extension, and is now actually engaged in the necessary surveys therefor. That if your honorable Board should adopt the resolution aforesaid it will be impossible to carry passengers on said railroad over the proposed extension thereof except at a loss, and as a necessary result thereof the said company will be compelled to abandon such extension and the public will be deprived of the manifest advantage to be derived therefrom.

Therefore, the undersigned respectfully prays that your honorable body will set a time and place at which he may appear before you and produce evidence to sustain the foregoing protest.

[Signed:] A. M. STEVENSON, Pres. V. V. & C. L. R. R.

SUPPLEMENTAL SWORN STATEMENT. (Filed November 22, 1882.)

Total passenger earnings of V. V. and C. L. Railroad from January 1 to October 31, 1882	$7,285 65
Total passenger expenses from January 1 to October 31, 1882:	
To labor	$2,009 54
Stationery and printing	200 00
Repairs of passenger cars	867 15
Oil and waste	229 10
Wood	1,415 95
Miscellaneous expenses	500 00
Total	$5,221 74
Total passenger earnings	$7,285 65
Total passenger expenses	5,221 74
Total gain ten months	$2,063 91
Total passenger earnings	$7,285 65
Less 28½ per cent average reduction	2,076 41
Total	$5,209 24
Expenses	$5,221 74
Earnings	5,209 24
Loss	$12 50
Earnings for ten months and twenty-six days	$7,285 65
Average number of passengers per month	900
Average number of passengers per day	34
Average earnings for one day	$28 02
Average amount paid by each passenger	82 cents.
Amount paid by each passenger per mile for one day's run of passenger train (120 miles per day)	6 cents.

[Signed:] A. M. STEVENSON, Pres. V. V. & C. L. R. R.

Subscribed and sworn to before me on the twenty-second day of November, 1882, at the City and County of San Francisco, State of California, by A. M. Stevenson, Pres. V. V. and C. L. R. R., as a full and true statement to the best of his ability, knowledge, and belief.

C. J. BEERSTECHER,
Railroad Commissioner, Second District.

Indorsed: Filed November 17, 1882.

COMPARATIVE FREIGHT RATES.

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COMPARATIVE FREIGHT RATES.

It is a matter of the greatest interest to the public to know the tendency of rates of transportation, it being contended by some that they are stationary or sometimes liable to advance, while by railroad managers it is maintained that the inherent tendency of rates is toward reduction, and that this tendency is steady and uniform. To test the question in the most thorough manner tables have been prepared, which are appended, marked "I," "II," "III," and "IV," showing the actual operations of the freight department of the Central Pacific Railroad Company for its entire system of roads in Utah, Nevada, California, Arizona, New Mexico, and Texas, and also a similar statement for the roads in California. This data is made up directly from the way-bills or manifest of freight carried over the various divisions of the road during the months of August, 1877, and October, 1882. The tables show in detail the number of tons carried in each month, the charges, the "tons carried one mile," also the average rate per mile, and also the total amount of freight, charges, and "tons carried one mile," for each division, with the average rate per ton per mile for same.

From these it will be seen that while in the month of August, 1877, less than one per cent of the entire tonnage within the State of California was taken at one cent per ton per mile and under, nearly six per cent was taken in October, 1882. That while in 1877 twelve and one half per cent was at two cents per ton per mile, or less, in 1882 fifteen and one half was at that rate. In 1877 twenty-one per cent was at three cents per ton per mile. In 1882 nearly twenty-seven per cent was taken at that rate, while on the other hand in 1877 eight per cent of the business paid the legal maximum, or fifteen cents per ton per mile, in 1882 only three and six tenths per cent of the business paid that rate, while the highest rates of nine to fourteen cents per mile inclusive, were reduced in proportion. The average rate per mile on local business within the State was reduced from 4.605 cents in 1877 to 2.913 cents in 1882; but as the statements give the actual results of business in detail, on the various divisions of the road, they are of much more value than any general average, and must forever set at rest any question as to the assertion that the inherent tendency of freight rates is downward. This will appear at a glance from the following condensed exhibits marked "A" and "B":

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EXHIBIT A. (For Tables I and II.)

Average per cent of rates to the whole local freight for the months of August, 1877, and October, 1882, compared.

Rate per Ton per Mile.	August, 1877.	October, 1882.
At one cent and under	1.167	9.391
At two cents and under	11.206	16.310
At three cents and under	22.742	24.735
At four cents and under	18.752	11.053
At five cents and under	6.123	8.521
At six cents and under	5.686	5.030
At seven cents and under	4.739	4.660
At eight cents and under	5.109	7.294
At nine cents and under	4.919	3.357
At ten cents and under	3.728	1.870
At eleven cents and under	1.378	.801
At twelve cents and under	2.413	1.308
At thirteen cents and under	1.830	.607
At fourteen cents and under	2.864	1.108
Maximum	7.344	3.955
	100.000	100.000
The average rate per ton per mile on the whole local freight, in cents	4.354	2.635
The average rate per ton per mile on through freight, in cents	1.939	1.377
The average rate per ton per mile on through and local freight, in cents	3.066	2.132

Showing on the local freight a reduction of 39.480 per cent.
Showing on the through freight a reduction of 28.984 per cent.
Showing on the entire tonnage a reduction of 30.495 per cent.
All the above exclusive of free, empties, or company freight.

EXHIBIT B. (For Tables III and IV.)

Average per cent of rates to the California local freight for the months of August, 1877, and October, 1882, compared.

Rate per Ton per Mile.	August, 1877.	October, 1882.
At one cent and under	.910	5.870
At two cents and under	12.544	15.405
At three cents and under	21.060	26.977
At four cents and under	19.677	11.324
At five cents and under	6.745	9.083
At six cents and under	4.476	5.288
At seven cents and under	5.127	5.063
At eight cents and under	4.219	7.798
At nine cents and under	4.790	3.731
At ten cents and under	3.221	1.826
At eleven cents and under	1.593	.719
At twelve cents and under	2.871	1.480
At thirteen cents and under	2.086	.627
At fourteen cents and under	2.681	1.193
At maximum	8.000	3.606
	100.000	100.000
The average rate per ton per mile on the whole California local freight was, in cents	4.605	2.913
The average rate per ton per mile on through freight was	1.487	1.291
The average rate per ton per mile on through and local was	3.719	2.467

Showing on the local freight a reduction of 36.742 per cent.
Showing on the through freight a reduction of 13.180 per cent.
Showing on the through and local freight a reduction of 33.664 per cent.

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	One Cent and Under.			Two Cents and Under.			Three Cents and Under.			Four Cents and Under.			Five Cents and Under.			Six Cents an	
	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charg
	1,022,990	$2,278 75	340,289	8,071,170	$8,451 15	494,622	6,478,520	$17,051 88	656,393	6,562,450	$14,998 73	419,726	4,629,960	$13,518 06	335,149	3,106,510	$18,51
				390	3 00	25	3,227,890	7,611 02	281,714	520,900	928 84	27,900	292,310	433 96	9,264	702,500	95
				90	1 60	12	160,660	522 54	19,356							80,000	2
				741,200	2,056 60	118,864	925,890	2,678 03	111,209	970,960	4,410 30	120,736	180,000	350 00	7,320	143,450	1,14
on				143,470	480 36	29,048	73,495	352 48	14,229	17,550	122 59	363	53,290	383 41	7,877	112,000	23
on							6,300	40 91	1,520	1,540,000	638 70	16,940	98,270	56 41	1,229	143,850	13
n				807,930	3,010 14	200,218	696,880	3,537 71	172,797	2,040	18 20	506	62,340	50 77	1,044	1,320	1
				1,049,020	2,880 33	197,077	398,150	1,060 24	43,038	123,390	856 51	34,680	42,350	81 24	1,774	40,960	28
				2,278,580	3,956 83	236,661	9,062,360	22,968 67	1,002,499	10,990,970	22,894 26	650,374	1,105,730	1,865 12	42,870	601,910	1,07
on	122,650	250 30	40,540	2,690,280	6,139 15	414,962	5,465,080	9,114 75	382,066	4,022,960	10,878 45	321,316	2,022,040	4,191 95	89,297	699,010	1,05
				186,500	802 05	52,640	2,510,950	8,236 15	321,933	2,947,080	10,493 69	307,600	673,510	1,900 68	42,302	777,930	1,66
n	640,000	1,000 00	100,480	582,090	3,503 20	184,872	3,545,600	17,473 92	811,053	848,360	6,648 61	190,574	1,600	20 40	460	1,885,340	16,54
				609,680	3,131 36	222,842	2,266,280	6,847 98	305,483	162,870	581 16	15,863	213,240	2,549 20	57,419	410,150	1,32
	1,785,640	$3,529 05	481,309	17,160,310	$34,415 77	2,151,843	34,818,055	$97,496 28	4,123,290	28,709,530	$73,470 04	2,106,578	9,374,640	$25,401 20	596,005	8,704,930	$42,96
on		$\frac{733}{1000}$			$1\frac{559}{1000}$			$2\frac{365}{1000}$			$3\frac{487}{1000}$			$4\frac{282}{1000}$			$5\frac{61}{10}$

	Seven Cents and Under.			Eight Cents and Under.			Nine Cents and Under.			Ten Cents and Under.			Eleven Cents and Under.			Twelve Cents	
	3,433,180	$23,536 99	378,169	3,634,410	$35,351 97	487,244	4,890,010	$62,828 38	725,944	2,801,550	$18,504 94	199,613	741,620	$2,565 02	24,127	1,609,910	$4,89
	55,810	124 31	1,888	60,150	404 98	5,284	38,460	264 30	3,181	17,920	165 69	1,777	29,920	176 70	1,627	64,600	35
				30,240	166 18	2,257	14,090	151 74	876	5,910	65 80	725				410	
	20,000	14 00	200	43,110	545 23	7,537	9,040	89 13	1,098	1,160	12 49	419	15,880	288 40	2,682	28,470	20
on	125,750	220 76	3,468	101,300	184 70	2,403	29,510	53 01	613	125,650	190 98	1,949	78,990	202 62	1,759	175,350	9
on	20,070	15 25	224	15,610	17 17	242	32,430	48 64	584	38,380	124 39	1,329	3,120	3 88	28	26,940	10
	36,040	45 05	649	61,540	64 16	834	82,110	60 31	728	176,270	211 47	2,318	11,270	46 69	452	576,830	3,44
	83,840	1,210 18	19,302	26,030	337 62	4,602	36,640	72 28	848	53,090	144 82	1,500	144,780	232 18	2,225	31,630	19
	1,121,470	2,107 70	28,062	569,590	1,215 10	16,436	335,390	1,010 12	11,887	632,560	1,488 82	16,754	471,870	2,149 73	20,706	539,920	3,42
on	1,553,520	3,262 35	50,646	764,885	1,572 37	21,054	557,910	2,110 73	23,981	190,440	667 80	6,606	507,620	6,116 65	57,817	558,530	7,03
	777,210	836 71	12,492	550,050	761 13	10,408	1,398,970	1,585 90	17,982	1,501,240	3,286 96	33,552	20,910	123 26	1,131	11,320	23
n	290	4 45	70	22,820	77 50	1,026	83,670	1,264 10	14,652	160,530	2,646 13	28,461	83,250	1,782 90	17,585	7,080	
	26,010	167 58	2,634	1,942,500	1,932 58	24,373	23,030	114 88	1,298	4,950	134 10	1,458	1,250	29 80	284	63,000	1,9
	7,253,190	$31,540 33	497,804	7,822,235	$42,630 69	583,700	7,531,260	$69,653 52	803,672	5,709,650	$27,644 39	296,461	2,110,480	$13,717 83	130,423	3,693,990	$22,01
on		$6\frac{336}{1000}$			$7\frac{303}{1000}$			$8\frac{667}{1000}$			$9\frac{328}{1000}$			$10\frac{517}{1000}$			11_{1}

	Thirteen Cents and Under.			Fourteen Cents and Under.			Maximum.			Empties.			Company Freight.			One Cent and Under	
	1,946,110	$4,681 26	36,645	259,920	$4,728 82	35,340	3,391,200	$11,946 66	79,645	368,730	----------	39,346	27,764,010	----------	1,773,310	1,391,720	$2,27
	94,970	202 28	1,602	58,730	72 32	532	142,200	312 79	2,086	26,350	----------	1,785	414,900	----------	6,432	26,350	------
	1,200	7 63	59	136,490	316 50	2,385	74,110	121 61	810	60	----------	2	2,360	----------	59	60	------
	47,510	185 86	1,479	8,640	21 21	153	77,910	581 00	3,867	25,680	----------	1,751	720,150	----------	26,050	25,680	------
on	48,790	210 34	1,597	283,050	1,154 46	8,537	473,020	2,424 29	16,615	4,910	----------	73	2,218,570	----------	93,247	4,910	------
on	460	3 08	25	5,800	33 01	248	260,650	269 22	1,795	----------	----------	----------	6,081,910	----------	13,927	----------	------
	30	22	2	660	7 40	53	53,490	159 84	1,066	40	----------	2	60,010	----------	620	40	------
	5,110	17 27	140	50,190	75 57	558	128,030	1,079 22	7,277	5,380	----------	564	1,812,850	----------	57,056	5,380	------
	249,990	464 34	3,556	297,270	2,521 11	18,444	1,760,380	3,105 13	20,700	85,300	----------	4,819	3,303,270	----------	75,941	85,300	------
on	230,010	2,113 65	16,637	2,272,780	18,938 15	138,009	3,710,640	28,046 51	186,977	98,360	----------	3,422	8,535,000	----------	473,758	221,010	2
	37,060	680 13	5,502	251,570	1,667 08	12,499	334,320	1,856 80	11,063	92,470	----------	11,571	3,337,860	----------	85,655	92,470	------
	3,510	63 56	499	715,900	2,103 74	15,206	363,400	2,219 35	14,147	23,180	----------	3,012	3,466,890	----------	162,921	663,180	1,0
	138,520	2,526 25	20,187	44,580	792 46	5,910	476,030	4,679 26	26,616	6,450	----------	487	11,383,220	----------	1,490,645	6,450	------
	2,803,270	$11,155 89	87,930	4,385,580	$32,431 83	237,874	11,245,380	$56,801 68	372,664	736,910	----------	66,834	69,101,000	----------	4,259,621	2,522,550	$3,5
on		$12\frac{683}{1000}$			$13\frac{684}{1000}$		California, $14\frac{955}{1000}$; Nevada, $16\frac{483}{1000}$; Joint, $15\frac{242}{1000}$.										$0\frac{644}{100}$

Ton per Mile by Divisions on Local Freight, Exclusive of Company's Freight and Empties.

	Pounds.	Charges.	Ton 1 Mile.	Rate per Ton per Mile.
	52,579,510	$243,845 27	4,584,422	5.321
	5,306,750	12,003 40	357,574	3.356
	503,200	1,378 08	27,289	5.049
	3,213,220	12,582 56	398,950	3.153
on	1,841,215	6,311 40	97,882	6.447
on	2,191,880	1,489 07	27,560	5.403
n	2,568,750	10,674 32	411,607	2.593
	2,213,210	8,521 07	319,965	2.663
	30,017,990	70,242 99	2,118,369	3.315
on	25,368,355	101,488 92	1,831,353	5.541
	11,978,620	34,135 98	861,179	3.964
n	8,943,350	55,428 95	1,670,085	3.319
	6,382,090	26,763 40	725,989	3.686

Average per Cent of Rates to the Whole.

One per cent and under	1.167
Two per cent and under	11.206
Three per cent and under	22.742
Four per cent and under	18.752
Five per cent and under	6.123
Six per cent and under	5.686
Seven per cent and under	4.739
Eight per cent and under	5.109
Nine per cent and under	4.919
Ten per cent and under	3.728
Eleven per cent and under	1.378
Twelve per cent and under	2.413
Thirteen per cent and under	1.830
Fourteen per cent and under	2.864

The average rate per ton per mile on the whole local freight, exclusive of free and company's freight was
The average rate per ton per mile on through freight was
The average rate per ton per mile on through and local freight was

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Two Cents and Under.			Three Cents and Under.			Four Cents and Under.			Five Cents and Under.			Six Cents and Under.		
Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Ton
5,874,290	$10,570 23	1,141,146	5,649,310	$29,381 45	1,869,024	8,762,030	$42,432 39	1,651,849	5,235,240	$27,144 71	767,677	4,495,330	$33,977 37	756,077	6,533,080	$61,815 42	
761,100	376 86	38,105	1,318,620	842 58	49,112	1,121,700	620 78	22,494	267,110	233 59	6,464	153,970	118 92	2,687	402,660	435 33	
395,750	748 85	329,150	3,736,850	7,877 04	479,368	14,250,720	19,956 46	850,554	1,297,030	1,378 91	38,762	2,600,570	2,279 66	48,116	1,271,690	5,304 63	
			1,289,380	2,897 62	149,700	182,210	612 59	24,849	42,410	144 14	4,616	78,160	380 96	8,252	244,520	146 74	
512,000	217 94	21,794	2,838,610	8,163 82	532,549	279,600	425 51	16,739	274,960	1,289 78	37,270	629,350	1,943 68	43,041	26,280	47 86	
475,820	1,580 68	158,675	3,136,920	11,617 70	986,439	657,280	2,663 05	110,305	1,217,140	10,755 94	313,711	1,559,590	4,733 54	109,164	446,920	1,558 78	
4,457,150	4,373 72	437,373	5,860	1 47	73							2,067,700	2,906 60	64,163	386,120	797 64	
						67,260	8 41	370				129,250	169 16	3,890			
			469,610	656 74	47,670	167,820	530 25	22,506	1,428,470	601 43	16,367	269,360	279 00	5,909	257,020	395 87	
			2,029,370	9,661 30	729,521	216,590	1,221 66	49,465	651,290	3,402 71	90,333	470,930	4,350 41	104,636	475,660	1,283 41	
5,000	20 58	2,058	94,780	222 31	11,040	86,760	419 89	18,086	438,070	1,143 33	30,008				13,580	346 01	
10,548,620	47,508 80	4,751,017	3,439,680	12,832 11	715,029	325,740	1,056 03	40,580	535,900	2,040 59	55,919	716,680	1,429 87	32,641	679,760	3,094 21	
8,594,200	9,558 01	955,801	844,720	1,332 65	67,324	2,230	1 75	73	43,000	76 80	2,207	260,000	184 00	3,930	463,120	412 85	
7,366,500	19,675 37	2,408,817	7,772,620	34,790 44	2,424,198	8,862,940	17,633 98	759,499	8,712,890	9,640 38	306,865	7,539,810	7,966 59	181,262	4,549,880	6,715 03	
			2,912,550	2,923 68	152,022	459,510	440 19	20,537	167,820	373 67	11,400	2,811,090	2,126 20	49,215	350,820	396 21	
			223,230	158 25	10,009	97,160	139 65	6,659	164,580	493 74	12,426	78,640	91 77	2,064	73,070	170 14	
286,410	236 43	24,793	19,933,200	34,397 43	1,986,145	31,320,480	49,791 31	2,323,295	2,700,700	3,449 36	99,867	2,495,950	3,009 29	66,428	1,383,790	2,098 49	
64,450	50 82	5,006	394,090	418 40	23,191	34,704,380	40,111 86	1,738,855	1,446,700	14,122 17	391,414	8,487,970	6,878 52	34,983	2,724,530	3,815 04	
2,686,380	2,677 99	279,681	8,370,500	24,560 83	1,708,950	4,002,460	8,348 11	343,507	3,526,860	8,655 58	251,986	1,524,360	4,690 35	104,228	1,481,740	2,709 58	
83,530	89 99	9,069	6,355,570	22,666 75	1,681,221	1,767,670	5,053 20	199,491	3,732,260	15,165 88	430,408	933,690	2,221 10	48,385	627,640	1,318 99	
369,770	374 44	108,090	1,271,720	7,102 12	380,539	3,529,130	18,267 24	814,741	279,590	1,360 65	42,483	1,004,530	3,204 92	67,606	62,020	80 63	
83,950	286 18	37,448	1,832,890	9,722 05	629,906	1,238,550	5,251 79	219,328	934,010	2,475 43	70,145	313,920	1,760 12	37,497	248,870	1,047 05	
42,564,920	$98,346 89	10,708,023	73,920,080	$222,226 74	14,633,030	112,102,220	$214,986 10	9,233,782	50,096,030	$103,948 79	2,980,328	38,620,850	$84,702 03	1,774,174	22,702,770	$93,989 91	
$\frac{818}{1000}$			$1\frac{518}{1000}$			$2\frac{328}{1000}$			$3\frac{487}{1000}$			$4\frac{774}{1000}$			$5\frac{450}{1000}$		

Eight Cents and Under.			Nine Cents and Under.			Ten Cents and Under.			Eleven Cents and Under.			Twelve Cents and Under.			Thirteen Cents and Un
3,037,120	$43,911 75	585,683	7,173,910	$48,877 33	578,555	1,240,960	$7,286 25	78,798	429,210	$3,244 82	30,742	941,670	$3,822 46	33,002	226,660	$1,748 67	
5,910	30 11	397	74,100	71 23	839	3,360	8 62	91	3,490	7 17	66	323,490	126 03	1,071	6,650	12 44	
121,420	826 97	11,002	198,350	715 18	8,345	220,880	261 00	2,691	103,780	448 78	4,240	118,020	453 54	3,925	110,560	272 48	
52,530	130 64	1,660	77,790	223 27	2,731	21,550	41 43	433	32,230	197 11	1,811	27,450	98 14	841	30,730	93 45	
180,540	955 40	32,963	2,940	56 25	578	5,940	82 61	898	39,590	195 18	1,837	105,810	338 54	2,938	105,710	216 37	
1,093,480	6,852 58	89,266	262,130	2,970 62	35,046	818,110	7,112 63	75,106	277,140	4,725 66	45,395	721,290	2,731 90	23,676	356,200	1,044 17	
9,110,010	8,199 05	113,865	957,070	1,041 79	12,538	2,316,250	2,687 12	26,889	18,280	65 06	601	100,970	102 37	892	24,230	47 52	
71,080	36 20	473	1,030	75	9	11,850	10 84	108				90	39	3			
127,150	87 83	1,210	50,390	68 44	803				58,330	72 35	691	59,890	124 77	1,109	65,800	119 23	
239,580	437 71	5,774	176,170	174 84	2,002	133,540	113 50	1,197	34,180	79 68	764	311,800	1,013 61	8,856	47,470	255 21	
2,050	60 74	782	120,470	553 80	6,401	590	12 39	127	580	14 07	132	20,850	37 02	322	1,310	19 97	
211,430	1,842 06	14,131	244,280	1,260 75	14,972	145,460	832 15	8,657	75,650	380 33	3,637	18,250	141 58	1,221	23,010	189 66	
3,210	91 96	1,273	35,340	319 41	3,896	29,580	240 65	2,526	71,470	483 26	4,730	30	09	1	2,290	18 00	
11,033,830	1,518 21	20,059	1,741,570	4,493 72	52,197	822,210	1,438 02	14,947	340,520	1,312 19	12,380	610,890	946 38	8,145	249,990	431 36	
899,490	1,068 98	14,348	1,469,480	733 31	8,916	249,810	258 22	2,769	8,580	89 30	842	101,580	176 92	1,572	620	1 48	
3,470	20 82	262	14,690	42 46	491	5,840	23 76	245	750	9 70	96	730	4 39	39	210	2 43	
586,550	1,250 76	16,988	507,590	826 77	9,843	364,590	1,058 24	11,185	692,100	1,327 03	12,578	825,790	577 25	5,003	427,470	924 49	
716,390	954 23	12,652	1,188,530	1,174 28	13,709	433,380	418 57	4,397	125,430	360 40	3,375	766,850	1,041 08	9,017	442,450	377 09	
3,113,960	6,557 91	87,930	647,010	1,912 35	22,096	469,340	1,242 87	13,013	640,010	5,814 68	55,032	750,700	9,440 20	83,339	348,200	2,768 39	
1,933,020	1,232 51	16,061	70,210	886 50	10,584	1,148,960	2,386 29	24,524	81,380	599 57	5,770	78,820	345 10	3,027	92,860	722 32	
282,130	174 32	2,355	49,090	630 58	7,301	33,860	141 05	1,529	1,600	15 94	151	3,080	65 80	564	5,770	123 93	
238,470	709 31	8,484	155,000	852 51	9,597	5,970	159 51	1,629	600,580	3,502 87	32,478	47,200	858 49	7,512	190,620	3,558 32	
33,062,820	$76,950 05	1,037,618	15,217,140	$67,886 14	801,449	8,482,130	$25,815 72	271,760	3,634,880	$22,945 15	217,348	5,935,250	$22,446 05	196,075	2,758,810	$12,946 98	
$7\frac{416}{1000}$			$8\frac{420}{1000}$			$9\frac{488}{1000}$			$10\frac{656}{1000}$			$11\frac{447}{1000}$			$12\frac{427}{1000}$		

Maximum.			Empties.—Free.			One Cent and under, including Empties.			Company Freight			Free to Points for Reshipment.			Average Rate per Ton per M ions on Local Freight (exclu ties, Free, and Company's
4,768,040	$13,272 54	88,484				5,874,290	$10,570 23	1,141,146	1,907,790		279,571	1,439,250		15,018	
39,730	49 66	332				761,100	376 86	38,105	1,694,610		20,805	20		1	
285,870	631 96	4,214				395,750	748 85	329,150	1,084,680		49,364	522,320		17,542	58,006,660	$371,675 63	
54,460	122 17	815							82,010		1,512	20,000		2,550	4,945,020	3,121 35	
30,020	158 05	1,054				512,000	217 94	21,794	1,485,940		156,593	200		12	26,058,430	43,759 23	
706,730	3,843 94	25,841	20,000		300	495,820	1,580 68	158,975	1,769,450		251,851	11,230		157	2,155,650	5,127 41	
294,840	405 62	2,705	63,550		350	4,520,700	4,373 72	437,723	26,885,120		760,215	63,550		350	5,062,450	14,215 30	
3,460	8 50	57	210		2	210		2	60,000		320	210		2	12,512,330	64,911 74	
229,800	247 85	1,681	38,800		477	38,800		477	1,710		291	38,800		477	20,389,700	21,179 34	
38,090	179 60	1,198							801,170		55,845	1,434,540		21,374	285,520	237 04	
91,270	639 07	4,261				5,000	20 58	2,058	570,410		46,065	58,890		1,377	3,200,110	3,213 71	
635,150	3,306 11	22,041				10,548,620	47,508 80	4,751,017	3,611,770		397,198				5,124,120	22,551 23	
96,220	120 02	801				8,594,200	9,558 01	955,801	6,666,730		262,205				1,123,700	4,293 88	
992,600	2,369 82	15,799	1,035,670		216,815	8,402,170	19,675 37	2,625,632	19,816,700		1,444,899	60,930		1,253	18,155,790	78,377 48	
187,540	318 52	2,124							347,550		3,898				10,447,920	12,866 54	
6,850	43 55	297							1,956,400		105,392				66,326,770	113,278 53	
1,923,760	1,929 55	12,864	40,000		10,220	326,410	236 43	35,013	1,218,070		43,588				13,338,180	11,106 81	
902,250	1,606 01	10,707				64,450	50 82	5,006	5,272,560		139,524	123,220		857	703,380	1,254 61	
3,592,080	22,631 54	150,877	20,730		4,163	2,707,110	2,677 99	283,844	13,693,530		1,172,381				66,139,790	105,656 90	
1,884,220	3,331 04	17,684	560		10	84,090	89 99	9,079	4,350,610		271,596	64,850		5,590	70,473,070	72,844 20	
317,230	1,298 91	8,026	24,910		8,926	394,680	374 44	117,016	6,620,850		391,826				35,029,710	114,327 30	
849,430	6,049 43	35,613	3,940		556	87,890	286 18	38,004	7,736,500		1,168,635				19,592,770	56,867 30	
															7,266,280	33,129 16	
17,929,640	$62,563 46	407,475	1,248,370		241,819	43,813,290	$98,346 89	10,949,842	107,634,160		7,023,574	3,838,010		66,560	6,844,460	38,239 02	

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FREIGHT FROM POINTS IN CALIFORNIA, VIA THE CENTRAL AND SOUTHERN PACIFIC RAILROADS, AUGUST, 1877.

SHOWING RATES PER TON PER MILE AT WHICH IT WAS HAULED, AND THE AVERAGE RATE PER TON PER MILE BY DIVISIONS.

m—	One Cent and Under.			Two Cents and Under.			Three Cents and Under.			Four Cents and Under.			Five Cents and Under.			Six Cent	
	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	C
n	1,022,990	$2,278 75	340,289	8,071,170	$8,451 15	494,622	6,478,520	$17,051 88	656,393	6,562,450	$14,998 73	419,726	4,629,960	$13,518 06	335,149	3,106,510	$1
				390	3 00	25	3,227,890	7,611 02	281,714	520,900	928 84	27,900	292,310	433 96	9,264	702,500	
				90	1 60	12	160,660	522 54	19,356							80,000	
				741,200	2,056 60	118,864	925,890	2,678 03	111,209	970,960	4,410 30	120,736	180,000	350 00	7,320	143,450	
sion				143,470	480 36	29,048	73,495	352 48	14,229	17,550	122 59	363	53,290	383 41	7,877	112,000	
sion							6,300	40 91	1,520	1,540,000	638 70	16,940	98,270	56 41	1,229	143,850	
on				807,930	3,010 14	200,218	696,880	3,537 71	172,797	2,040	18 20	506	62,340	50 77	1,044	1,320	
				1,049,020	2,880 33	197,077	398,150	1,060 24	43,038	123,390	856 51	34,680	42,350	81 24	1,774	40,960	
				2,278,580	3,956 83	236,661	9,062,360	22,968 67	1,002,499	10,990,970	22,894 26	650,374	1,105,730	1,865 12	42,870	601,910	
sion	122,650	250 30	40,540	2,690,280	6,139 15	414,962	5,465,080	9,114 75	382,066	4,022,960	10,878 45	321,316	2,022,040	4,191 95	89,297	699,010	
	1,145,640	$2,529 05	380,829	15,782,130	$26,979 16	1,691,489	26,495,225	$64,938 23	2,684,821	24,751,220	$55,746 58	1,592,541	8,486,290	$20,930 92	495,824	5,631,510	$2
ton		0\frac{686}{1000}$			1\frac{894}{1000}$			2\frac{418}{1000}$			3\frac{500}{1000}$			4\frac{221}{1000}$			

	Seven Cents and Under.			Eight Cents and Under.			Nine Cents and Under.			Ten Cents and Under.			Eleven Cents and Under.			Twelve Ce	
	3,433,180	$23,536 99	378,169	3,634,410	$35,351 97	487,244	4,890,010	$62,828 38	725,944	2,801,550	$18,504 94	199,613	741,620	$2,565 02	24,127	1,609,910	$
	55,810	124 31	1,888	60,150	404 98	5,284	38,460	264 30	3,181	17,920	165 69	1,777	29,920	176 70	1,627	64,600	
				30,240	166 18	2,257	14,090	151 74	876	5,910	65 80	725				410	
	20,000	14 00	200	43,110	545 23	7,537	9,040	89 13	1,098	1,160	12 49	419	15,880	288 40	2,682	28,470	
sion	125,750	220 76	3,468	101,300	184 70	2,403	29,510	53 01	613	125,650	190 98	1,949	78,990	202 62	1,759	175,350	
sion	20,070	15 25	224	15,610	17 17	242	32,430	48 64	584	38,380	124 39	1,329	3,120	3 88	28	26,940	
on	36,040	45 05	649	61,540	64 16	834	82,110	60 31	728	176,270	211 47	2,318	11,270	46 69	4	576,830	
	83,840	1,210 18	19,302	26,030	337 62	4,602	36,640	72 28	848	53,090	144 82	1,500	144,780	232 18	2,2.	31,630	
	1,121,470	2,102 70	28,062	569,590	1,215 10	16,436	335,390	1,010 12	11,887	632,560	1,488 82	16,754	471,870	2,149 73	20,706	539,920	
ion	1,553,520	3,262 35	50,646	764,885	1,572 37	21,054	557,910	2,110 73	23,981	190,440	667 80	6,606	507,620	6,116 65	57,817	558,530	
	6,449,680	$30,531 59	482,608	5,306,865	$39,859 48	547,893	6,025,590	$66,688 64	769,740	4,042,930	$21,577 20	232,990	2,005,070	$11,781 87	111,423	3,612,590	$1
ton		6\frac{336}{1000}$			7\frac{275}{1000}$			8\frac{663}{1000}$			9\frac{280}{1000}$			10\frac{574}{1000}$			

	Thirteen Cents and Under.			Fourteen Cents and Under.			Maximum.			Empties.			Company Freight.			One Cent and Un	
	1,946,110	$4,681 26	36,645	259,920	$4,728 82	35,340	3,391,200	$11,946 66	79,645	368,730		39,346	27,764,010		1,773,310	1,391,720	$
	94,970	202 28	1,602	58,730	72 32	532	142,200	312 79	2,086	26,350		1,785	414,900		6,432	26,350	
	1,200	7 63	59	136,490	316 50	2,385	74,110	121 61	810	60		2	2,360		59	60	
	47,510	185 86	1,479	8,640	21 21	153	77,910	581 00	3,867	25,680		1,751	720,150		26,050	25,680	
sion	48,790	210 34	1,597	283,050	1,154 46	8,537	473,020	2,424 29	16,615	4,910		73	2,218,570		93,247	4,910	
sion	460	3 08	25	5,800	33 01	248	260,650	269 22	1,795				6,081,910		13,927		
on	30	22	2	660	7 40	53	53,490	159 84	1,066	40		2	60,010		620	40	
	5,110	17 29	140	50,190	75 57	558	128,030	1,079 22	7,277	5,380		564	1,812,850		57,056	5,380	
	249,990	464 34	3,556	297,270	2,521 11	18,444	1,760,380	3,105 13	20,700	85,300		4,819	3,303,270		75,941	85,300	
sion	230,010	2,113 65	16,637	2,272,780	18,938 15	138,009	3,710,640	28,046 51	186,977	98,360		3,422	8,535,000		473,758	221,010	
	2,624,180	$7,885 95	61,742	3,373,530	$27,868 55	204,259	10,071,630	$48,046 27	320,838	614,810		51,764	50,913,030		2,520,400	1,760,450	$
ton		12\frac{772}{1000}$			13\frac{643}{1000}$			14\frac{876}{1000}$									0

PER TON PER MILE BY DIVISIONS ON LOCAL FREIGHT, EXCLUSIVE OF COMPANY'S FREIGHT AND EMPTIES.

	Pounds.	Charges.	Tons 1 Mile.	Rate per Ton per Mile.
n	52,579,510	$243,845 27	4,584,422	5.321
	5,306,750	12,003 40	357,574	3.356
	503,200	1,378 08	27,289	5.049
	3,213,220	12,582 56	398,950	3.153
ision	1,841,215	6,311 40	97,882	6.447
ision	2,191,880	1,489 07	27,560	5.403
on	2,568,750	10,674 32	411,607	2.593
	2,213,210	8,521 07	319,965	2.663
	30,017,990	70,242 99	2,118,369	3.315
sion	25,368,355	101,488 92	1,831,353	5.541
	125,804,080	468,537 08	10,172,971	4.605
	9,234,610	60,050 50	4,036,514	1.487
	135,038,690	$528,587 58	14,209,485	3.719

AVERAGE PER CENT OF RATES OF THE WHOLE.

One per cent and under	0.910
Two per cent and under	12.544
Three per cent and under	21.060
Four per cent and under	19.677
Five per cent and under	6.745
Six per cent and under	4.476
Seven per cent and under	5.127
Eight per cent and under	4.219
Nine per cent and under	4.790
Ten per cent and under	3.221
Eleven per cent and under	1.593
Twelve per cent and under	2.871
Thirteen per cent and under	2.086
Fourteen per cent and under	2.681
Maximum	8.000
	100.000

The average rate per ton per mile on the whole local freight, exclusive of free and company's freight was
The average rate per ton per mile on through freight was
The average rate per ton per mile on through and local freight was

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IV. FREIGHT FROM POINTS IN CALIFORNIA, VIA THE CENTRAL AND SOUTHERN PACIFIC RAILROADS, OCTOBER, 1882.

SHOWING RATES PER TON PER MILE AT WHICH IT WAS HAULED, THE AVERAGE RATE PER TON PER MILE BY DIVISIONS, ETC.

	One Cent and Under.			Two Cents and Under.			Three Cents and Under.			Four Cents and Under.			Five Cents and Under.			Six Cents and Under.		
	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons 1 Mile.	Pounds.	Charges.	Tons
-------	5,874,290	$10,570 23	1,141,146	5,649,310	$29,381 45	1,869,024	8,762,030	$42,432 39	1,651,849	5,235,240	$27,144 71	767,677	4,495,330	$33,977 37	756,077	6,533,080	$61,815 42	1,
-------	761,100	376 86	38,105	1,318,620	842 58	49,112	1,121,700	620 78	22,494	267,110	233 59	6,464	153,970	118 92	2,687	402,660	435 33	
-------	395,750	748 85	329,150	3,736,850	7,877 04	479,368	14,250,720	19,956 46	850,554	1,297,030	1,378 91	38,762	2,600,570	2,279 66	48,116	1,271,690	5,304 63	
-------				1,289,380	2,897 62	149,700	182,210	612 59	24,849	42,410	144 14	4,616	78,160	380 96	8,252	244,520	146 74	
-------	512,000	217 94	21,794	2,838,610	8,163 82	532,549	279,600	425 51	16,739	274,960	1,289 78	37,270	629,350	1,943 68	43,041	26,280	47 86	
-------	475,820	1,580 68	158,675	3,136,920	11,617 70	986,439	657,280	2,663 05	110,305	1,217,140	10,755 94	313,711	1,559,590	4,733 54	109,164	446,920	1,558 78	
-------	4,457,150	4,373 72	437,373	5,860	1 47	73							2,067,700	2,906 60	64,163	386,120	797 64	
-------							67,260	8 41	370				129,250	169 16	3,890			
-------				469,610	656 74	47,670	167,820	530 25	22,506	1,428,470	601 43	16,367	269,360	279 00	5,909	257,020	395 87	
-------				2,029,370	9,661 30	729,521	216,590	1,221 66	49,465	651,290	3,402 71	90,333	470,930	4,350 41	104,636	475,660	1,283 41	
-------	7,366,500	19,675 37	2,408,817	7,772,620	34,790 44	2,424,198	8,862,940	17,633 98	759,499	8,712,890	9,640 38	306,865	7,539,810	7,966 59	181,262	4,549,880	6,715 03	
-------				2,912,550	2,923 68	152,022	459,510	440 19	20,537	167,820	373 67	11,400	2,811,090	2,126 20	49,215	350,820	396 21	
-------				223,230	158 25	10,009	97,160	139 65	6,659	164,580	493 74	12,426	78,640	91 77	2,064	73,070	170 14	
-------	286,410	236 43	24,793	19,933,200	34,397 43	1,986,145	31,320,480	49,791 31	2,323,295	2,700,700	3,449 36	99,867	2,495,950	3,009 29	66,428	1,383,790	2,098 49	
-------	64,450	50 82	5,006	394,090	418 40	23,191	34,704,380	40,111 86	1,738,855	1,446,700	14,122 17	391,414	8,487,970	6,878 52	34,983	2,724,530	3,815 04	
-------	2,686,380	2,677 99	279,681	8,370,500	24,560 83	1,708,950	4,002,460	8,348 11	343,507	3,526,860	8,655 58	251,986	1,524,360	4,690 35	104,228	1,481,740	2,709 58	
-------	22,879,850	$40,508 89	4,844,540	60,080,720	$168,348 75	11,147,971	105,152,140	$184,936 20	7,941,483	44,133,200	$81,686 11	2,349,158	35,392,030	$75,902 02	1,584,115	20,607,780	$87,690 17	1,
-------		0\frac{836}{1000}$			1\frac{510}{1000}$			2\frac{320}{1000}$			3\frac{477}{1000}$			4\frac{781}{1000}$			5\frac{441}{1000}$	

	Eight Cents and Under.			Nine Cents and Under.			Ten Cents and Under.			Eleven Cents and Under.			Twelve Cents and Under.			Thirteen Cents and Unde		
-------	3,037,120	$43,911 75	585,683	7,173,910	$48,877 33	578,555	1,240,960	$7,286 25	78,798	429,210	$3,244 82	30,742	941,670	$3,822 46	33,002	226,660	$1,748 67	
-------	5,910	30 11	397	74,100	71 23	839	3,360	8 62	91	3,490	7 17	66	323,490	126 03	1,071	6,650	12 44	
-------	121,420	826 97	11,002	198,350	715 18	8,345	220,880	261 00	2,691	103,780	448 78	4,240	118,020	453 54	3,925	110,560	272 48	
-------	52,530	130 64	1,660	77,790	223 27	2,731	21,550	41 43	433	32,230	197 11	1,811	27,450	98 14	841	30,730	93 45	
-------	180,540	955 40	32,963	2,940	56 25	578	5,940	82 61	898	39,590	195 18	1,837	105,810	338 54	2,938	105,710	216 37	
-------	1,093,480	6,852 58	89,266	262,130	2,970 62	35,046	818,110	7,112 63	75,106	277,140	4,725 66	45,395	721,290	2,731 90	23,676	356,200	1,044 17	
-------	9,110,010	8,199 05	113,865	957,070	1,041 79	12,538	2,316,250	2,687 12	26,889	18,280	65 06	601	100,970	102 37	892	24,230	47 52	
-------	71,080	36 20	473	1,030	75	9	11,950	10 84	108				90	39	3			
-------	127,150	87 83	1,210	50,390	68 44	803				58,330	72 35	691	59,890	124 77	1,109	65,800	119 23	
-------	239,580	437 71	5,774	176,170	174 84	2,002	133,540	113 50	1,197	34,180	79 68	764	311,800	1,013 61	8,856	47,470	255 21	
-------	11,033,830	1,518 21	20,059	1,741,570	4,493 72	52,197	822,210	1,438 02	14,947	340,520	1,312 19	12,380	610,890	946 38	8,145	249,990	431 36	
-------	899,490	1,068 98	14,348	1,469,480	733 31	8,916	249,810	258 22	2,769	8,580	89 30	842	101,580	176 92	1,572	620	1 48	
-------	3,470	20 82	262	14,690	42 46	491	5,840	23 76	245	750	9 70	96	730	4 39	39	210	2 43	
-------	586,550	1,250 76	16,988	507,590	826 77	9,843	364,590	1,058 24	11,185	692,100	1,327 03	12,578	825,790	577 25	5,003	427,470	924 49	
-------	716,390	954 23	12,652	1,188,530	1,174 28	13,709	433,380	418 57	4,397	125,430	360 40	3,375	766,850	1,041 08	9,017	442,450	377 09	
-------	3,113,960	6,557 91	87,930	647,010	1,912 35	22,096	469,340	1,242 87	13,013	640,010	5,814 68	55,032	750,700	9,440 20	83,339	348,200	2,768 39	
-------	30,392,510	$72,839 15	994,532	14,542,750	$63,382 59	748,698	7,117,710	$22,043 68	232,768	2,803,620	$17,949 11	170,450	5,767,020	$20,997 97	183,428	2,442,950	$8,314 78	
-------		7\frac{323}{1000}$			8\frac{465}{1000}$			9\frac{470}{1000}$			10\frac{530}{1000}$			11\frac{447}{1000}$			12\frac{510}{1000}$	

	Maximum.			Empties.—Free.			One Cent and under, including Empties.			Company Freight.			Free to Points for Reshipment.			Average Rate per Ton per Mile ions on Local Freight (exclusiv ties, Free, and Company's Fre		
-------	4,768,040	$13,272 54	88,484				5,874,290	$10,570 23	1,141,146	1,907,790		279,571	1,439,250		15,018	58,006,660	$371,675 63	
-------	39,730	49 66	332				761,100	376 86	38,105	1,694,610		20,805	20		1	4,945,020	3,121 35	
-------	285,870	631 96	4,214				395,750	748 85	329,150	1,084,680		49,364	522,320		17,542	26,058,430	43,759 23	
-------	54,460	122 17	815							82,010		1,512	20,000		2,550	2,155,650	5,127 41	
-------	30,020	158 05	1,054				512,000	217 94	21,794	1,485,940		156,593	200		12	5,062,450	14,215 30	
-------	706,730	3,843 94	25,841	20,000		300	495,820	1,580 68	158,975	1,769,450		251,851	11,230		157	12,512,330	64,911 74	
-------	294,840	405 62	2,705	63,550		350	4,520,700	4,373 72	437,723	26,885,120		760,215	63,550		350	20,389,700	21,179 34	
-------	3,460	8 50	57	210		2	210		2	60,000		320	210		2	285,520	237 04	
-------	229,800	247 85	1,681	38,800		477	38,800		477	1,710		291	38,800		477	3,200,110	3,213 71	
-------	38,090	179 60	1,198							801,170		55,845	1,434,540		21,374	5,124,120	22,551 23	
-------	992,600	2,369 82	15,799	1,035,670		216,815	8,402,170	19,675 37	2,625,632	19,816,700		1,444,899	60,930		1,253	66,326,770	113,278 53	
-------	187,540	318 52	2,124							347,550		3,898				13,338,180	11,106 81	
-------	6,850	43 55	297							1,956,400		105,392				703,380	1,254 61	
-------	1,923,760	1,929 55	12,864	40,000		10,220	326,410	236 43	35,013	1,218,070		43,588				66,139,790	105,656 90	
-------	902,250	1,606 01	10,707				64,450	50 82	5,006	5,272,560		139,524	123,220		857	70,473,070	72,844 20	
-------	3,592,080	22,631 54	150,877	20,730		4,163	2,707,110	2,677 99	283,844	13,693,530		1,172,381				35,029,710	114,327 30	
-------	14,056,120	$47,818 88	319,049	1,218,960		232,327	24,098,810	$40,508 89	5,076,867	78,077,290		4,486,049	3,714,270		59,593	389,750,890	$968,460 33	3
-------		14\frac{887}{1000}$						0\frac{787}{1000}$								24,986,670	163,134 04	
-------																414,737,560	$1,131,594 37	4

Average Rate per Ton per Mile on the whole Local Business, exclusive of Empties, Free, and Company's Freight ..... .02913
Average Rate per Ton per Mile on Through Freight ..... .01291
Average Rate per Ton per Mile on Through and Local Freight ..... .02467

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APPENDICES.

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APPENDIX I.

THE PRINCIPLES GOVERNING RAILROAD RATES.

As a means of directing attention to the investigation of the relation of common carriers to the public, and to aid in bringing about a better understanding of the principles upon which tariffs are framed, a translation of a paper of the highest authority is subjoined hereto:

[By M. de la Gournerie, Inspector General of the French Corps of Bridges and Highways. First published in the Bulletin of the Society for the Encouragement of National Industry, of February, 1879, and afterward in the Revenue Generale des Chemins de Fer, of March.]

(*Translated for the Railroad Gazette.*)

"The science of economics is summarized in the word *value*, of which it is simply the long definition."—*Bastiat.*

A certain confusion prevails in discussions relative to the establishment of railroad rates, because the question is not governed by any generally accepted principle. The studies which I have made have convinced me that, in spite of some peculiar circumstances, the operation of railroads, like all other industries, is subject to the great laws of economics; that in it the prices should be regulated according to the *value* of the transportation as determined by the action of supply and demand; that when different bases are adopted, such as the length of the haul or the amount of the cost, we are led into contradictions and impossibilities; that the existence of a monopoly modifies the effects of supply and demand, but does not suppress them; finally, that the measures by which sometimes the charging of certain kinds of transportation according to its value is prevented, injures the interests which they are intended to protect.

I propose to examine these different positions separately.

GENERAL CONSIDERATIONS CONCERNING VALUE.

The *value* of goods is regulated by an equilibrium between supply and demand. In general the *cost* of production influences only the *supply*, and is only one element of the *value*. The difference between what a product is worth and what it has cost is sometimes quite large. Thence result various irregularities which strike us strongly when we begin to study the industrial order of society.

In consequence of exterior circumstances, often difficult to foresee, supply and demand may experience variations which, by modifying values, introduce the greatest trouble into callings. We have seen industries, such as that of hand-weavers, destroyed, and numerous families fall into misery.

The question of temporary suffering, caused by new machines, is connected with the much more general problem raised by the difference between cost price and value.

Nevertheless, an attentive examination shows that the law of supply and demand contains a regulative principle indispensable to society. It directs workmen towards the most useful works, and resources towards the countries threatened by want; it perfects the arts by stimulating all activities; augments the general wealth, and attracts mankind into new paths. It is a universal suffrage, where each person is frequently called upon to vote as a producer and as a consumer. The totality of what is offered for sale, the totality of demands, determine the impulses, and their resultant governs the industrial world.

This law is not of human invention; it is established everywhere, and we cannot comprehend how society could exist without it. Those powers which have desired to overrule it in matters of any importance have aggravated the evils which they intended to prevent, and have abandoned the attempt. Everything proves that we ought to confine ourselves to mitigating the sufferings (very real they are) which it accidentally occasions, but without opposing its effects, at least in industries on a large scale. An article of transportation, like every article of goods and like every service, has a value determined by the action of supply and demand; we should pay for it, not what it costs, but what it is worth. An exception to the general law of transactions should be made only for powerful motives.

Without dwelling on this point, I proceed to examine some special questions which have occasioned lively discussions.

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TRANSPORTATION OF WOOL FROM ALGIERS TO ROUBAIX.

The Northern and the Mediterranean railroad companies carry wool from Marseilles to Roubaix at the rate of 76.50 francs per ton. A few years ago the wool sent from Algiers to the same destination was carried to Dunkirk by English vessels for 65 francs. The expenses at Dunkirk, and the carriage thence to Roubaix barely exceeded 11.50 francs, so that, under the action of supply and demand, the transportation of wool to Roubaix had practically the same value from Algiers as from Marseilles.

The wool shipments from Algiers could not be attracted to our railroads and secured for French vessels except by asking 76.50 francs for the whole distance. This is what the companies agreed to do. They pay 20 francs for the freight across the Mediterranean, and retain the sum of 56.50 francs, which they consider sufficient to indemnify them for the expenses imposed by the transportation from Marseilles to Roubaix. We may suppose that they find a slight profit in this transaction; a railroad, in its own interest and in that of the country, ought not to neglect any traffic of a kind that will increase its receipts more than its expenses.

The inhabitants of Marseilles, believing, no doubt, that the cost of transportation determines its value, demand that the wool which they ship be charged at the same rate as that which comes from Algiers. If the rate of 56.50 francs is remunerative, they say the companies should not ask more.

The different units of transportation carried by a company are far from giving equal profits. If, because some of them leave as net profit only a very small part of the receipt, we assume to regulate the tariff so that it shall get only the same proportion of the whole gross receipts, it will not be able to meet the obligations which it has contracted.

The certain result of requirements of this kind would be to lead the companies to refuse all shipments on which they could not make a high profit, and consequently to abandon a considerable income while depriving the country of cheap transportation for a great quantity of merchandise.

In all industries, in consequence of irregularities in the demand, of variations in the cost of raw materials, and of a thousand other circumstances, the different products yield unequal profits. This is especially evident where, in secondary manufactures, a surplusage is utilized—an excess of motive power, a piece of useless ground, or workmen temporarily unoccupied. A good manufacturer neglects no source of revenue. The enterprise should be judged according to the total receipts and expenditures.

The argument of the remunerative price leads to the conclusion that, in any one undertaking, the profits on all the products should be reduced to the level of the lowest profits. Such a principle would cause great injury to industries, and would occasion a considerable advance in prices.

Bearing in mind the facilities for navigation between Algiers and Dunkirk, it would not have been at all surprising if the transportation of wool to Roubaix had cost less from the first named city than from Marseilles, and then the railroad companies, supposing them free to act, would have been led to ask lower rates, if they could have done so without loss to themselves.

DIFFERENTIAL RATES—CLAUSE CONCERNING "STATIONS NOT DESIGNATED."

We read in a pamphlet published under the auspices of the Administration of Public Works, in September, 1877:

"In the early days of railroad operation, the differential system was pushed so far as to become an abuse; thus it was not uncommon to see a given freight pay more for a less distance than for a greater distance on the same line. From Paris to Angers, for instance, the charge was higher than from Paris to Nantes, and that even in the general tariff.

"These anomalies, so much charged against the railroads, were not, however, a new event in the transportation business. Before the establishment of railroads, the carters likewise imposed a higher rate from Paris to Angers (191 miles) than from Paris to Nantes (246 miles), and we see that, over this route, the railroad had only followed the old cartage irregularities. The boats, on their part, formerly took more from Chalon-sur-Saone to Villifranche (60 miles) than from Chalon to Lyons (81 miles); more from Lyons to Tarascon (155 miles) than from Lyons to Arles (165 miles)."

Freight could be shipped from Paris to Nantes by navigation of the Seine, and by barges. We understand, therefore, that under the action of supply and demand, transportation from Paris had less value to Nantes than to Angers.

The transportation from Chalon to Villifranche was effected by flat-boats destined for Lyons, which had to make landings and lost time, or by special boats, for which it was difficult to get full loads. The causes of the differences could not be established with certainty without a minute investigation, which does not appear at all useful in the question which occupies us.

The railroads are under the same conditions as the carters and the boatmen. I do not see how it could be possible to establish that transportation never has a less value for a longer than for a shorter distance, or that each separate transportation should not be paid for according to its value.

The facts noticed in the document which I have cited do not appear to me to show either abuses or anomalies. It is important, however, to observe that these facts were accepted perfectly so long as they were the result of unrestricted competition.

However that may be, for several years the administration, by the clause "concerning stations not designated," forbids, in shipments in the same direction, a higher rate for a less distance. I consider this measure as an expedient calculated to diminish the frequency of complaints.

The rule now imposed upon the companies leads them perhaps to reduce their rates over certain sections, but it is probable that it oftener prevents them from reducing their rates when the value of the transportation diminishes.

A nation can adopt artificial combinations upon its own territory, but in its relations with other nations the reality of commercial facts appears, and brings to light the viciousness of the arrangements adopted. The clause, "concerning stations not designated," has permitted foreign railroads to take a part of the traffic between Roubaix and St. Dié, cities in the vicinity of the frontier. Our companies cannot enter into competition and reduce their profits for this distance to the furthest limit, because they would be obliged to grant the same advantages to a great number of intermediate stations, and consequently suffer a considerable loss.

The administration has been obliged to authorize, for transit through the country, special tariffs, not to be taken as a basis for claiming the application of the clause "concerning stations not designated." It is evident that foreigners could not be made to pay more than it was worth for transportation.

UNIFORMITY OF TARIFFS.

A good deal is said of uniformity of tariffs—of regulating the rates according to the distance carried, without taking into account the value of the transportation. Thus, for example, an average price would be fixed for certain agricultural products, which might be six centimes per ton per kilometre (1.723 cents per ton per mile). Under these conditions it would be impossible to construct a railroad in a country poorly cultivated and difficult of access, for the receipts would be insignificant. The inhabitants would declare in vain that they had no outlet, and that a railroad with a tariff of fifteen centimes would be a blessing to them. In a rich country permeated by canals, a railroad with a six centimes rate could not compete with the boats; it would find no market for its transportation; it would not be constructed unless the passenger traffic promised to yield it sufficient receipts.

The situation remains the same in case the tariff is regulated by a scale according to distance. Good results can be obtained only by fixing rates closely in conformity to the *value* of the transportation. If they exceed it, the road is of little utility to the country, and yields small receipts. If they are less than it, a gift is made to the community. I do not pretend that this latter arrangement ought to be rejected absolutely, but I believe that it can only be admitted in peculiar cases, for special reasons, and that then it is important to anticipate all the consequences.

Except for grave reasons, an arrangement contrary to the rules universally admitted in commerce ought not to be adopted. No farmer ever had the idea, in order to simplify calculations, of offering all his products for sale at retail at one average price; some would be taken away immediately, but with loss to him, and he could not get rid of others.*

Uniformity of tariffs would occasion much greater inconveniences in France than in a smaller country, all parts of which should be under nearly the same economical conditions.

It is doubtless well to prevent the introduction of too great a complication in the tables of rates, but it should be remarked that the companies will hesitate long in reducing their rates if every reduction has to apply to a large class of transportation, especially in consideration of the difficulties which are now put in the way of advancing rates.

OBJECTION BASED ON THE UNIFORMITY OF THE RATE ON LETTERS.

The success of certain uniformities, and notably of that which has been introduced into postal rates, is not an argument of great weight.

In the country the distribution of letters appears to be effected at a price less than its real value. It is different in cities, but the overcharge, which cannot be much, occasions but slight inconvenience.

If, in the composition of postal rates, regard was had not only to the weight and nature of the papers, but moreover to the distance carried, the care necessary to verify the stamps and charge at each reshipment would introduce a very objectionable delay into the operations.†

However, when the results obtained in France are examined, it is important to notice that, in consequence of the conditions imposed upon the railroads, the administration shows in its budget only a part of the Post Office expenses, and that thus the whole burden of the development of the service does not rest upon it.

TARIFF REGULATED ACCORDING TO COST.

Some have proposed to regulate the tariff in accordance with the cost of the transportation. This basis could not be applied to those roads whose net earnings cannot cover the interest on the capital invested.‡ For others it tends to fix the rates very low.

The question to which we find ourselves brought back offers some analogy, on good lines, with that of tolls on highways; but, without entering into a discussion which would require long consideration, I should remark that the difficulties of collection, which are great on ordinary highways, do not exist at all on roads where a charge for transportation is collected, and

*The comparison seems fair to me. A company which loses a certain amount of transportation because it asks as high a price for it as for other transportation having a higher value, seems to be acting like a farmer who should let rot those of his productions which are least in demand rather than sell them at the market price. It is important to observe, however, that the value of any given transportation on a railroad is not known with precision, because it results from a maximum, as I shall explain further on.

†On this question an article by Bastiat, in the Journal des Economistes of May, 1846, may be consulted.

‡*Prix de revient* is the term used by M. de la Gournerie, and here translated "cost." It means cost including interest on the investment.—*Translator.*

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then that the abandonment of revenues can be considered only when in possession of sufficient resources.

VALUE OF THE PRODUCTS IN COUNTRIES SUBMITTED TO A MONOPOLY.

The permanent intervention of the administration in the operation of railroads is sought to be justified by saying that the companies, relieved from all competition, fix their rates in a manner wholly arbitrary.

I will first remark that the monopoly is not absolute, for the railroads find as competitors, under different circumstances, the coasting vessels, the river and canal boats, the stage coaches, and the freight wagons, and next, that a privilege modifies the effects of supply and demand, but does not destroy them. A great many monopolies exist, some by law, others *de facto*,* and the different merchandise has none the less a value determined without any intervention of authority. The owner of a patent can doubtless demand an exaggerated price for his productions, but when he sees that he disposes of only a small quantity of them, it often happens that he reduces his charges in order to increase his profits. If he had fixed upon too low a price, the flood of orders would lead him promptly to repair his fault. The price to which he finds himself conducted in his own interests is the result of the working of supply and demand, and determines the value of the production for the manufacture of which he has a privilege.

These considerations are applicable, even in case of competition, to every industry capable of receiving a considerable development. The constructors of machines may be led to reduce their prices not only by the struggle which they make to attract the orders that are going, but also by the desire to extend the use of certain of their productions.

VALUE OF A HAUL BY RAILROAD—MODIFICATIONS WHICH IT UNDERGOES WHEN THE OPERATING EXPENSES DIMINISH.

During the first years after their charters, the companies were almost free to regulate their tariffs within certain limits. Spontaneously they made reductions for freight, and offered to passengers various advantageous arrangements. It is possible even that in certain cases they knowingly reduced the rates below the figures which would have procured them the greatest immediate net profits, in order to develop the industry of the country which they served; this was sowing in order that they might reap.

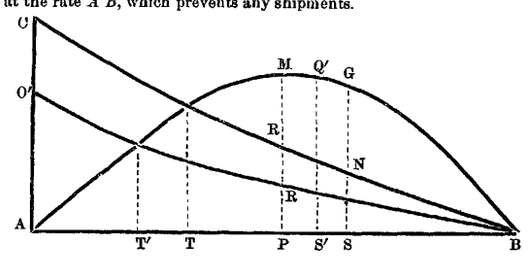
At this epoch we had not invented any of the restrictive measures by which we injure the interests which we wish to protect. The companies were able to make experiments, to take account of the growth which the different branches of commerce were capable of making, and to appreciate with sufficient certainty the effects of supply and demand.

The value of any transportation depends essentially upon the operating expenses; it falls when they diminish. I think it necessary to demonstrate this proposition, although it may appear to be a self-evident truth.

The gross receipts are very small when the rates are either extremely low or excessive. The expenses, without being in proportion to the tonnage, vary constantly in the same direction that it does, and in directions inversely as the rates charged; they are large when the rates are low, because then the tonnage is large. From this it results that the maximum net profit corresponds with a rate higher than that which produces the maximum gross receipts, and that the difference is as much greater as the operation is more costly. When the expenses diminish the value of the transportation falls, and the profits of the company increase.†

*In France the cartage and coach business over long routes have always been *de facto* monopolies.

†By the aid of a diagram, greater clearness can be given to the considerations. The curve *A M B* represents the variations of the net profit of a railroad, on the transportation of certain goods between two given stations, on the supposition that different rates are asked successively. The gross receipt *S Q* corresponds to the rate *A S*. The receipt is nothing when the rate is abolished entirely, and also when it is of an amount, *A B*, so great that shippers give up sending by rail the goods in question. The curve *C N B* indicates the expense attaching to the merchandise at the different rates. As I have said, this expense is large when the rate is low; it becomes nothing at the rate *A B*, which prevents any shipments.



The abscissas *A P* and *A S* correspond, the first to the maximum receipt *P M*, the second to the maximum net profit *R Q*. This latter, always larger than the other, determines the value *A S* of the transportation per ton.

If, by more skillful operation, or by improving the technical conditions under which the road is constructed, we succeed in reducing the expenses, the curve *C B* will become *C' B*, and it will become the company's interest to ask the rate *A S'*, which in the new state of things, gives the net profit its maximum amount, *R' Q'*. The community profits by the reduction, *S S'*, of rates; the company secures the increase of net receipts *R' Q'—R Q*. The expenses will not exceed the gross receipts until the rate is less than *A T'*.

For different kinds of freight and different sections of the road, the curves will present special features; here we need only attend to their general form.

The reduction of profits when the expenses, and especially when the general expenses, increase in every locality, keeps the number of workshops of each kind in proper proportion to the extent of the market. It is not so in railroad business. Whatever the fate of the company receiving the charter, a road once constructed continues to be operated, even when its traffic is almost wholly drawn from neighboring lines, and when it serves specially only intermediate villages. There results from this a notable difference as to the effects of competition between railroads, and the industries in which the action of economical laws crushes pitilessly those enterprises which do not sufficiently respond to an actual want.

THE AMOUNT OF THE COST OF CONSTRUCTION OF A ROAD HAS NO INFLUENCE ON THE VALUE OF THE TRANSPORTATION.

The problem in operation is to obtain the largest possible net profit—that is, to render the difference between the annual receipts and the annual expenses as great as possible. Now, neither the receipts nor the expenses depend upon the amount of capital employed to place the road in the condition in which it may be. This capital then exercises no influence upon the value of the transportation, and consequently none upon the rates.

It doubtless may happen that a company gets in debt during construction, and that, finding itself unable to make the expenditures necessary for the development of stations and the increase of rolling stock, it restricts its traffic by maintaining high rates. An undertaking cannot be properly conducted by a company involved in debt, whatever be the causes which have compromised its financial situation. This is not the question which I am examining; the question is to know whether a company, having certain resources and possessing a road of a certain technical condition, will be led to take account of the amount of the sum which it has expended in fixing its rates. If this were true, then in certain cases it would be necessary that it should voluntarily reduce its profits. That is not the way things happen; a company always seeks to obtain the greatest possible profit, and the *shareholders receive a higher or lower rate of interest according to the amount of the capital invested.*

CONCERNING BLOCKADES OF TRAFFIC.

In most industries production and consumption present irregularities which, modifying the relations of supply and demand, introduce variations in the value of the goods.

When an exceptional circumstance attracts a great crowd of strangers into a city, rents rise, and consequently on the one hand the inn-keepers are led to make expenditures for the purpose of appropriating new apartments to let out; on the other hand, many persons reduce the time of their stay. The result of these two effects is that all who arrive find a place, while, if the authorities had decreed that rates should be fixed, many travelers could have found no shelter.

Difficulties of the same kind often occur in the transportation business, and it has generally solved them in the same manner. When the demand becomes greater, the wagoners, the boatmen, and the coasters increase their rates.*

In England and in the United States the railroads raise their tariffs; the goods which are in the least haste then wait until the prices are reduced to the ordinary rates. The solution of the blockade problem consists in the variation of rates, the consequence of which is the establishment of storehouses wherever exceptional rushes of freight may occur, for vessels and cars ought never to take their place.

On this question M. Nouette-Delorme has written:

"Is there a single factory or commercial house in existence which arranges its expenses in accordance with the exceptional needs of a few days in the year? It is just the same with monopolies. There is no uprising against the Post Office administration because on New Year's Day the distribution of letters suffers delays for a week. No one is astonished because the omnibus company refuses many people on holidays; we do not require it to regulate its stock by the Sunday travel, which would cause three fourths of it to be useless the rest of the time, and consequently lead it to increase its rates. If the tobacco administration† is out of such or such a brand of cigars, it asks you to wait, or to smoke some other kind. In a word, all trades which are free, just like all monopolies, are organized so as to suffice only for the largest ordinary requirements, without pretendiug to be equal to exceptional cases, even when anticipated and regular."

The question, as I have shown, does not concern competition and monopoly, but fixed rates and flexible rates. Livery carriages, which are not a monopoly, are lacking on certain days, because it is not permitted to raise the prices for them. It seems to me that in this latter case the advantages of an exception to the rule of supply and demand exceed its inconveniences. I have already conceded, in connection with the rate of postage, that it may be useful to admit modifications in the application of principles.

The establishment of fixed tariffs for railroads, in spite of the variations of the value of transportation, permits blockades sometimes to reach somewhat serious proportions. The great extent of our systems, which permits a company promptly to concentrate material upon one part of the region which it serves, does not sufficiently reduce the evil.

*In 1847, freight on the Rhone rose to ten times the ordinary rate.—*Nouette-Delorme.*

†In France the government monopolizes the sale of tobacco.—*Translator.*

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SUMMARY.

I close, knowing very well that I have not solved all the difficulties that are every day met, but believing that my deductions may throw some light upon the question. I have sought to combat this widely-spread opinion, that in the commercial operation of railroads everything is artificial; that instead of observing, we must invent; that instead of habitually leaving the different interests to react upon each other through supply and demand, it is necessary to be regulating continually. If we were certain that the men who manage railroad business would always have a perfect understanding of these questions, my conclusion would be to leave the matter to them entirely; but the companies enjoy too great power for us to resign ourselves to endure tranquilly the consequences of their errors. I think, then, that the State should preserve its powers, watch attentively, but prescribe little.

APPENDIX II.

FORM OF ANNUAL RETURNS.

For ascertaining more accurately in detail the cost, condition, operation, and management of the railroads of the State, a form which has been adopted by the National Convention of Railroad Commissioners is incorporated in this report, and recommended, with one exception, viz.: the calendar year should be the fiscal year. This form has been recommended, after careful consideration, by the most eminent and experienced of the Railroad Commissioners of the United States, and also by the ablest railroad accountants.

It will not involve an increase of the clerical force over that now employed, and the advantage of a form of accounts which is clear and comprehensive, will conduce to harmonize antagonisms with the public, by showing that there are no mysterious secrets of transportation companies that must be covered up by some vague and incomprehensible system of keeping accounts.

The fact that an unintelligible system of bookkeeping is practiced by any company is evidence that there are practices which will not bear the light of public investigation. Let the governing authority require such a system of accounts and returns as will pass the scrutiny of expert accountants, and one cause of public complaint will be removed. The public, who has business relations with the transportation companies, are not unreasonable when they understand that certain practices, which appear wrong in themselves, are the result of conditions growing out of a business which is in some of its phases exceptional and peculiar in character, and which requires great experience as well as intelligence in mastering it. But a business which is with the public should be so conducted as to leave no just grounds of complaint which a reasonable publicity will remove.

EXTRACT FROM OFFICIAL REPORT OF THE THIRD GENERAL CONVENTION OF RAILROAD COMMISSIONERS.

REPORT ON BOOKKEEPING AND ACCOUNTS.

The undersigned, in behalf of the Committee on "Bookkeeping and Accounts," appointed at the Convention held at Columbus, Ohio, on the twelfth of November, 1878, and of the railroad accountants who were requested to act with said committee, respectfully report:

That in pursuance of their instructions to prepare a uniform system of accounts and returns, this committee first issued a schedule for the consideration and criticism of those interested in the subject, and on the twenty-fourth of April last met in the City of New York with Messrs. Leland, of Ohio; Shinn, of Pennsylvania; Wilbur and Towne, of Boston, railroad accountants, when a large number of communications from representative accountants were considered, and certain rules and a form of returns agreed upon, which, as finally amended and adopted at an adjourned meeting, held on the tenth instant, are herewith submitted, viz.:

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RULES, ETC.

I.

All liabilities (including interest accrued on funded debt) shall be entered upon the books in the month when they are incurred, without reference to date of payment.

II.

Expenses shall be charged each month with such supplies, materials, etc., as have been *used* during that month, without reference to the time when they were purchased or paid for.

III.

No expenditure shall be charged to property accounts, except it be for actual increase in construction, equipments, or other property, unless it is made on old work in such a way as to clearly increase the value of the property over and above the cost of renewing the original structures, etc.

In such cases only the amount of increased cost shall be charged, and the amount allowed on account of the old work shall be stated.

IV.

Mileage of passenger and freight trains shall include only the miles shown to be run by distances between stations; allowances made to passenger or freight trains for switching and all mileage of switching engines, computed on a basis of eight miles per hour for the time of actual service, shall be stated separately.

V.

Season ticket passengers shall be computed on the basis of twelve (12) passengers per week for the time of each ticket.

Local traffic shall include all passengers carried on local tickets, and all freight carried at local traffic or special local rates.

All other traffic shall be considered through.

GENERAL EXHIBIT.

Total income
Total expense, including taxes
Net income
Interest on funded debt
Interest on unfunded debt
Rentals
Balance applicable to dividends
Dividends declared (per cent)
Balance for the year
Balance (profit and loss) last year
Add or deduct various entries made during the year not included above (specifying same).
Balance (profit and loss) carried forward to next year

CHARGES AND CREDITS TO PROPERTY DURING THE YEAR.

Construction and equipment (specifying same)
Other charges (specifying same)
Total charges
Property sold or reduced in value (specifying same)
Net addition (or reduction) for the year

ANALYSIS OF EARNINGS AND EXPENSES.

Earnings.

From local passengers
Through passengers
Express and extra baggage
Mails
Other sources, passenger department
Total earnings passenger department
Local freight
Through freight
Other sources, freight department
Total earnings freight department
Total transportation earnings
Rents for use of road
Income from other sources (specifying same)

Total income from all sources

Expense.

Salaries, general officers and clerks
Law expenses
Insurance
Stationery and printing
Outside agencies and advertising
Contingencies
Repairs—bridges (including culverts and cattle guards)
Repairs—buildings
Repairs—fences, road crossings, and signs
Renewal—rails
Renewal—ties
Repairs—roadway and track
Repairs—locomotives
Fuel for locomotives
Water supply
Oil and waste
Locomotive service
Repairs—passenger cars
Passenger train service
Passenger train supplies
Mileage—passenger cars (debit balance)
Repairs—freight cars
Freight train service
Freight train supplies
Mileage—freight cars (debit balance)
Telegraph expenses (maintenance and operating)
Damage and loss—freight and baggage
Damage to property and cattle
Personal injuries
Agents' and station service
Station supplies
Number of men employed
Wages paid each class
Percentage of cost of labor to total expenses

Total expenses
Taxes
Total operating expenses and taxes

ASSETS AND LIABILITIES.

Assets.

Construction account
Equipment account
Other investments (specifying same)
Cash items:
Cash
Bills receivable
Due from agencies and companies
Other assets:
Materials and supplies
Sinking funds
Debit balances

Total assets

Liabilities.

Capital stock
Funded debt
Unfunded debt, as follows
Interest unpaid
Dividends unpaid
Notes payable
Vouchers and accounts
Other liabilities
Profit and loss or income accounts

Total liabilities

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PRESENT OR CONTINGENT LIABILITIES NOT INCLUDED IN BALANCE SHEET.

Bonds guaranteed by this company or a lien on its road (specifying same)---
Overdue interest on same---
Other liabilities (specifying same)---

MILEAGE, TRAFFIC, ETC.

Mileage—passenger trains---
Freight trains---
Switching trains*---
Other trains---

Total train mileage---

Miles run by passenger, mail, and baggage cars (north or east)†---
Miles run by passenger, mail, and baggage cars (south or west)†---
Miles run by freight cars (north or east)†---
Miles run by freight cars (south or west)†---
Number of season ticket passengers---
Number of local passengers (including season)---
Number of through passengers---
Total number of passengers carried---
Mileage of local passengers (north or east)†---
Mileage of local passengers (south or west)†---
Mileage of through passengers (north or east)†---
Mileage of through passengers (south or west)†---

Total passenger mileage---

Number tons local freight carried---
Number tons through freight carried---

Total tons freight carried---

Mileage of local tonnage (north or east)†---
Mileage of local tonnage (south or west)†---
Mileage of through tonnage (north or east)†---
Mileage of through tonnage (south or west)†---

Total freight mileage---

Average weight of passenger trains---
Average number of cars in passenger trains---
Average weight of freight trains---
Average number of cars in train---
Average number of persons employed---
Length of road, branches, sidings, etc.---
Names of officers and directors---
Corporate name of company---

(Signed) GEORGE M. WOODRUFF, of Connecticut,
A. J. TURNER, of Wisconsin,
GEORGE M. BOGUE, of Illinois,
THOMAS H. CARTER, of Virginia,
Committee.

C. P. LELAND,
GEORGE E. TOWNE,
Accountants.

J. H. GOODSPEED,
Secretary.

SARATOGA, June 11, 1879.

* If any allowance is made to passenger or freight trains for switching, state the amount allowed to each here. Passenger trains, ——— miles; freight trains, ——— miles.
† This division is not compulsory, and need only be given by companies so keeping their accounts.

APPENDIX III.

STATEMENT.

We deem the following statement, taken from our first report, of sufficient importance to republish it in this:

CENTRAL PACIFIC RAILROAD COMPANY, GENERAL SUPERINTENDENT'S OFFICE,
SAN FRANCISCO, January 5, 1881.

To the honorable Board of Railroad Commissioners:

GENTLEMEN: Your memorandum of interrogations for 1879 and 1880, relative to the business of the Central Pacific Railroad and leased lines in California, at the hands of your Secretary, Mr. Andrus, was received December eighth.

As the interrogatories for both years are substantially identical, I will treat of 1880 only. You ask:

First—What is the amount of gross earnings of 1880 to your latest returns? State monthly.
Second—How much of above amount was earned in California? State total.
Third—How much of the earnings over the operating expenses? State total.
Fourth—How much earned on local passengers? How much earned on local freight?
Fifth—How much earned on passengers taking passage in California for points outside?
Sixth—How much earned on freights shipped from points in California to points outside?

These six interrogatories I would answer as a whole, and say that our accounts are not kept so that we can segregate California business from the other upon the line, so as to be able to give you the desired information. Your interrogatory relative to the number of trains run daily, is nearly as difficult to answer as the others; however, I have counted up, and give you herewith, the number of regular passenger trains and regular mixed, or accommodation trains, as per schedule for the present month; but this will give you little or no information of value, from the fact that there are special or excursion trains run when business requires, which are not embraced in the following. Then again, nearly all the regular freight trains have a car attached for the accommodation of passengers locally through the State.

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DAILY, BETWEEN STATIONS EACH WAY.

	Regular Passenger Trains.	Mixed or Accommodation
San Francisco and Niles	4	1
Niles and Livermore	2	1
Livermore and Tracy	1	
Tracy and Galt	2	2
Galt and Sacramento	1	2
Niles and San José	1	3
San Francisco and Port Costa	5	5
Port Costa and Davis	3	
Port Costa and Antioch	3	2
Antioch and Byron	2	2
Byron and Tracy	1	2
Davis and Sacramento	5	
Davis and Willows	1	1
Davis and Woodland	2	1
Davis and Knight's Landing	1	
Vallejo and Calistoga	2	
Vallejo and Napa Junction	4	
Vallejo and Suisun	2	
Sacramento and Roseville	3	2
Roseville and Redding	1	1
Roseville and Reno	2	1
Galt and Ione		1
Lathrop and Goshen	1	1
Goshen and Los Angeles	1	1
Goshen and Huron		1
Los Angeles and Arizona		3
Los Angeles and Wilmington		2
Los Angeles and Santa Ana		1
Los Angeles and Santa Monica		1
San Francisco and Oakland	29	
San Francisco and East Oakland	20	
San Francisco and Alameda	26	
San Francisco and Berkeley	12	
San Francisco and West Berkeley	10	
San Francisco and Shell Mound	22	

To your interrogatory No. 7, you ask us to "state the number of passengers carried in this State in 1880, to your latest returns, on the Central Pacific Railroad and leased lines, from and to stations on different sections of the road, so as to show the volume of travel on distinct portions of the road."

This information is nearly as difficult to obtain and give you in an intelligible form as that asked for in the first six interrogatories; but feeling desirous of doing all we could to get for you the information wanted, we at once, on receipt of your memorandum on the eighth ultimo, placed a corps of clerks upon this work, and herewith hand you the result.

To the casual observer it would seem to be but the work of an hour; but you will notice here are 289 stations on the Central Pacific Railroad and leased lines in California, requiring ten sheets of foolscap, double ruled, to each station, showing the number of passengers carried, and average number per day, requiring 120 entries to each sheet. You will also observe there are sixty distinctions to each sheet, and in the aggregate 2,890 sheets.

You ask for this information for the year 1879, and for that portion of 1880 up to and including our latest returns; but I am sure, when you have seen the great number of printed forms necessary to accomplish this work, and consider the labor put forth, you will, I think, be satisfied with the showing for one month, namely, September, 1880, having the largest passenger business. Every station report will be eyeleted together—ten sheets. I also send you herewith eleven sheets, eyeleted together, showing a recapitulation of passengers carried from any one station to all the others, and to any one station from all others, and showing the total number and average per day. Upon looking the recapitulation over more carefully, we have made a further synopsis, showing that there were forty-six stations from which there were no passengers carried:

Eight from which the daily average was 1/30
Nine from which the daily average was 1/15
Six from which the daily average was 1/10
Seven from which the daily average was 2/15
Three from which the daily average was 1/6
Three from which the daily average was 1/5
Three from which the daily average was 1/10
Two from which the daily average was 1/15
Five from which the daily average was 1/10
Three from which the daily average was 1/3
Three from which the daily average was 11/30
Two from which the daily average was 1/10
One from which the daily average was 13/30
Three from which the daily average was 1/15
Four from which the daily average was 1/2

There were also forty stations to which there were no tickets sold, and there were:

Fourteen to which the daily average was 1/30
Eleven to which the daily average was 1/15
Eight to which the daily average was 1/10
Four to which the daily average was 1/15
One to which the daily average was 1/6
Six to which the daily average was 1/5
Three to which the daily average was 7/30
Two to which the daily average was 4/15
One to which the daily average was 3/10
Six to which the daily average was 1/4
One to which the daily average was 11/30
Three to which the daily average was 4/10
Two to which the daily average was 13/30
Three to which the daily average was 7/15
Four to which the daily average was 1/2

This list might be continued, showing very many more stations that did not average one passenger a day either to or from.

Trusting the information we give you here may be of interest and entirely satisfactory, I am yours truly,

[Signed:] A. N. TOWNE,
General Superintendent.

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APPENDIX IV.

EXPORTS AND IMPORTS AT THE PORT OF SAN FRANCISCO.

YEARS.	Imports.	Exports.
1856	$7,289,037	$10,002,562
1857	9,130,698	12,210,719
1858	8,984,688	12,034,970
1859	11,155,767	12,403,782
1860	9,577,921	7,388,394
1861	8,506,506	10,414,468
1862	8,366,238	11,705,218
1863	10,682,409	9,944,114
1864	15,065,478	*118,198,072
1865	20,294,496	26,996,219
1866	15,568,416	27,226,419
1867	18,064,911	24,709,443
1868	19,503,987	23,790,164
1869	18,088,901	27,540,018
1870	21,834,103	32,186,021
1871	20,384,907	20,791,414
1872	33,330,901	26,243,061
1873	39,422,604	38,716,497
1874	32,248,320	33,563,846
1875	29,697,483	28,949,886
1876	34,085,491	28,867,564
1877	36,346,237	43,488,479
1878	32,502,313	35,392,703
1879	35,046,479	35,548,417
1880	41,265,317	37,213,443
1881	44,668,281	39,143,194

* Includes exports of the District of New Orleans.

APPENDIX V.

STATEMENT

Showing Reductions made in Passenger Rates during 1878, the Percentage of Reduction being 29.29.

Date.	Class.	From—	To—	Reduction Below Tariff.	Tariff Rates.
December 18	Local coupon	San Francisco	Mojave (for Independence)	$18 00	$21 15
December 18	Local coupon	San José	Mojave (for Independence)	18 00	21 15
December 18	Local coupon	Stockton	Mojave (for Independence)	18 00	21 15
December 18	Local coupon	Sacramento	Mojave (for Independence)	18 00	21 15
December 15	Local coupon	San Francisco	Mojave (for Darwin)	18 00	21 15
December 15	Local coupon	San José	Mojave (for Darwin)	18 00	21 15
December 15	Local coupon	Stockton	Mojave (for Darwin)	18 00	21 15
December 15	Local coupon	Sacramento	Mojave (for Darwin)	18 00	21 15
December 2	Third class	Oakland Wharf	Los Angeles	12 00	23 00
November 28	Special, first class	Oakville	San Francisco	2 25	2 75
November 19	Special, first class	San Francisco	Napa	1 50	2 00
November 19	Special, first class	San Francisco	Oak Knoll	1 75	2 25
November 19	Special, first class	San Francisco	Yountville	2 00	2 50
November 19	Special, first class	San Francisco	Oakville	2 25	2 75
November 19	Special, first class	San Francisco	Rutherford	2 25	2 75
November 19	Special, first class	San Francisco	St. Helena	2 50	3 00
November 19	Special, first class	San Francisco	Walnut Grove	2 75	3 25
November 19	Special, first class	San Francisco	Calistoga	3 00	3 50
November 16	Special, first class	Calistoga	San Francisco	3 00	3 50
November 16	Special, first class	St. Helena	San Francisco	2 50	3 00
November 16	Special, first class	Rutherford	San Francisco	2 25	2 75
November 16	Special, first class	Yountville	San Francisco	2 00	2 50
November 7	Special, first class	Lathrop	San Francisco	3 00	3 50
November 7	Special, second class	Lathrop	San Francisco	1 50	3 50
November 7	Round trip	Lathrop	San Francisco	5 00	7 00
November 10	Round trip (Sunday)	Oakland Wharf	Byron	3 00	4 50
November 10	Round trip (Sunday)	Oakland Wharf	Byron	3 00	4 50
November 10	Round trip (Sunday)	San Francisco	Byron	3 00	4 50

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APPENDIX V—Continued.

Date.	Class.	From—	To—	Reduction Below Tariff.	Tariff Rates.
October 24	Local coupon	Sacramento	Ione (for Plymouth)	$2 75	$3 50
October 24	Local coupon	San Francisco	Ione (for Plymouth)	5 50	6 25
October 3	Round trip	Los Angeles	Sacramento	34 00	46 00
October 3	Round trip	Sacramento	Los Angeles	34 00	46 00
October 3	Round trip	Stockton	Los Angeles	34 00	46 00
October 3	Round trip	San José	Los Angeles	34 00	46 00
October 3	Round trip	Los Angeles	San Francisco	34 00	46 00
October 3	Round trip	Oakland	Los Angeles	34 00	46 00
October 3	Round trip	San Francisco	Los Angeles	34 00	46 00
September 18	Local coupon	Sacramento	Ione (for Mokelumne Hill)	2 75	3 50
September 18	Local coupon	San Francisco	Ione (for Mokelumne Hill)	5 50	6 25
September 15	Round trip (Sunday)	San Francisco	Brentwood	2 00	3 90
September 10	Emigrant	Livermore	Los Angeles	12 00	23 00
September 10	Emigrant	Pleasanton	Los Angeles	12 00	23 00
September 6	Round trip	San Francisco	Martinez	1 00	2 00
September 6	Round trip	San Francisco	San Pablo	75	1 20
September 5	Local coupon	Oakland	Newhall (for San Buenaventura)	19 00	23 00
September 5	Local coupon	Oakland	Newhall (for Santa Barbara)	19 00	23 00
September 5	Local coupon	San Francisco	Newhall (for San Buenaventura)	19 00	23 00
September 5	Local coupon	San Francisco	Newhall (for Santa Barbara)	19 00	23 00
September 5	Individual monthly commutation	Pinole	San Francisco	10 00	54 00
September 5	Individual monthly commutation	San Pablo	San Francisco	7 00	36 00
September 5	Individual monthly commutation	San Francisco	Pinole	10 00	54 00
September 5	Individual monthly commutation	San Francisco	San Pablo	7 00	36 00
August 16	Round trip (bathing)	Ogden	Booneville	50	75
August 1	Local coupon	Sacramento	Reno (for Bodie)	12 75	12 75
August 1	Local coupon	Stockton	Reno (for Bodie)	13 00	14 75
August 1	Local coupon	San Francisco	Reno (for Bodie)	13 00	16 75
July 13	Round trip (Saturday and Sunday)	Melrose	San José	3 00	4 00
July 13	Round trip (Saturday and Sunday)	East Oakland	San José	3 00	4 00
July 13	Round trip (Saturday and Sunday)	Oakland	San José	3 00	4 00
July 13	Round trip (Saturday and Sunday)	San Francisco	San José	3 00	4 00
July 7	Round trip (Saturday and Sunday)	Oakland	San Pablo	75	1 00
July 7	Round trip (Saturday and Sunday)	Oakland	Martinez	1 00	2 00
July 7	Round trip (Saturday and Sunday)	Oakland Wharf	San Pablo	75	1 00
July 7	Round trip (Saturday and Sunday)	Oakland Wharf	Martinez	1 00	2 00
July 7	Round trip (Saturday and Sunday)	San Francisco	San Pablo	75	1 20

July 7	Round trip (Saturday and Sunday)	San Francisco	Martinez	1 00	2 00
May 25	Special, first class	Stockton	San Francisco	3 00	3 50
May 25	Round trip	Stockton	San Francisco	5 00	7 00
May 25	Special, first class	Sacramento	San Francisco	3 00	4 00
May 25	Round trip	Sacramento	San Francisco	5 00	8 00
May 25	Special, first class	Napa	San Francisco	1 50	2 00
May 25	Special, first class	San Francisco	Napa	1 50	2 00
May 25	Special, first class	San Francisco	Sacramento	3 00	4 00
May 25	Round trip	San Francisco	Sacramento	5 00	8 00
May 25	Special, first class	San Francisco	Stockton	3 00	3 50
May 25	Round trip	San Francisco	Stockton	5 00	7 00
May 1	Thirty trip commutation	Rutherford	San Francisco	56 00	82 50
May 1	Individual monthly commutation	Washington	San Francisco	11 00	90 00
May 1	Individual monthly commutation	Niles	San Francisco	10 00	75 00
May 1	Individual monthly commutation	Decoto	San Francisco	9 00	75 00
May 1	Individual monthly commutation	Haywards	San Francisco	7 50	45 00
May 1	Individual monthly commutation	San Leandro	San Francisco	5 00	30 00
May 1	Individual monthly commutation	Melrose	San Francisco	4 00	18 00
May 1	Individual monthly commutation	San Francisco	Fruitvale	3 00	9 00
May 1	Individual monthly commutation	San Francisco	Melrose	4 00	18 00
May 1	Individual monthly commutation	San Francisco	San Leandro	5 00	30 00
May 1	Individual monthly commutation	San Francisco	Lorenzo	6 00	45 00
May 1	Individual monthly commutation	San Francisco	Haywards	7 50	45 00
May 1	Individual monthly commutation	San Francisco	Decoto	9 00	75 00
May 1	Individual monthly commutation	San Francisco	Niles	10 00	75 00
May 1	Individual monthly commutation	San Francisco	Washington	11 00	90 00
April 18	Emigrant	Wells	San Francisco	30 00	44 25
April 18	Emigrant	Elko	San Francisco	30 00	40 25
April 18	Emigrant	Carlin	San Francisco	30 00	38 50
April 18	Emigrant	Palisade	San Francisco	30 00	37 75
April 14	Round trip (Sunday)	Alameda	San Francisco	25	30
April 14	Round trip (Sunday)	Oakland	San Francisco	25	30
April 14	Round trip (Sunday)	East Oakland	San Francisco	25	30
April 14	Round trip (Sunday)	Oakland Wharf	San Francisco	25	30
April 12	Special, first class	Corinne	San Francisco	48 00	53 00
April 12	Special, second class	Corinne	San Francisco	40 00	53 00
April 12	Special, third class	Corinne	San Francisco	30 00	53 00
April 12	Special, first class	Ogden	San Francisco	48 00	53 00
April 12	Special, second class	Ogden	San Francisco	40 00	53 00
April 12	Special, third class	Ogden	San Francisco	30 00	53 00
April 12	Special, first class	Kelton	San Francisco	48 00	53 00
April 12	Special, second class	Kelton	San Francisco	40 00	53 00
April 12	Special, third class	Kelton	San Francisco	30 00	53 00

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APPENDIX V—Continued.

Date.	Class.	From—	To—	Reduction Below Tariff.	Tariff Rates.
April 12	Special, first class	Colfax	Ogden	$48 00	$53 00
April 12	Special, second class	Colfax	Ogden	40 00	53 00
April 12	Special, third class	Colfax	Ogden	30 00	53 00
April 12	Special, first class	Marysville	Ogden	48 00	53 00
April 12	Special, second class	Marysville	Ogden	40 00	53 00
April 12	Special, third class	Marysville	Ogden	30 00	53 00
April 12	Special, first class	Sacramento	Ogden	48 00	53 00
April 12	Special, second class	Sacramento	Ogden	40 00	53 00
April 12	Special, third class	Sacramento	Ogden	30 00	53 00
April 12	Special, first class	Stockton	Ogden	48 00	53 00
April 12	Special, second class	Stockton	Ogden	40 00	53 00
April 12	Special, third class	Stockton	Ogden	30 00	53 00
April 12	Special, first class	Lathrop	Ogden	48 00	53 00
April 12	Special, second class	Lathrop	Ogden	40 00	53 00
April 12	Special, third class	Lathrop	Ogden	30 00	53 00
April 12	Special, first class	San José	Ogden	48 00	53 00
April 12	Special, second class	San José	Ogden	40 00	53 00
April 12	Special, third class	San José	Ogden	30 00	53 00
April 12	Special, first class	Oakland	Ogden	48 00	53 00
April 12	Special, second class	Oakland	Ogden	40 00	53 00
April 12	Special, third class	Oakland	Ogden	30 00	53 00
April 12	Special, first class	San Francisco	Ogden	48 00	53 00
April 12	Special, second class	San Francisco	Ogden	40 00	53 00
April 12	Special, third class	San Francisco	Ogden	30 00	53 00
April 9	Local coupon (round trip)	San Francisco	Geysers (via Calistoga)	5 00	7 00
April 9	Local coupon (round trip)	San Francisco	Geysers (via Calistoga)	3 00	3 50
April 9	Local coupon (round trip)	San Francisco	Geysers (via Calistoga)	3 00	3 50
March 1	Round trip	Sacramento	San Francisco	6 00	8 00
March 1	Round trip	San Francisco	Sacramento	6 00	8 00
January 2	Emigrant	Santa Ana	San Francisco	14 00	25 00
Total				$2,302 25	$3,810 45
Showing a reduction of 39.58 per cent.					
October 10—Round trip between Lathrop, Los Angeles, and intermediates				21,002 50	29,131 80
Showing a reduction of 27.90 per cent.					
Grand total				$23,304 75	$32,942 25
Which shows a reduction for the year 1878 of 29.29 per cent.					

APPENDIX VI.

STATEMENT

Showing Reductions in Local Ticket Rates within the State of California, during the Year 1879.

Between—	Regular Rate.	Regular Rate Reduced.	Per Cent of Reduction.	Reduced Special First Class.	Per Cent of Reduction.	Remarks.
San Francisco and Calistoga	$3 50			$3 00	14.3	(Geysers) March 18, 1879.
San Francisco and Melrose	30	$0 25	16.7			April 1, 1879.
San Francisco and Mitchell	50	35	30.0			April 1, 1879.
San Francisco and San Leandro	50	40	20.0			April 1, 1879.
San Francisco and Lorenzo	75	50	33.3			April 1, 1879.
San Francisco and Haywards	75	65	13.3			April 1, 1879.
San Francisco and Decoto	1 25	90	28.0			April 1, 1879.
San Francisco and Niles	1 25	1 00	20.0			April 1, 1879.
San Francisco and Washington	1 50	1 20	20.0			April 1, 1879.
San Francisco and Warm Springs	1 75	1 40	20.0			April 1, 1879.
San Francisco and Milpitas	2 00	1 60	20.0			April 1, 1879.
San Francisco and San José	2 00	1 75	12.5			April 1, 1879.
San Francisco and Pleasanton	1 75	1 50	14.3			April 1, 1879.
San Francisco and Suñol	1 50	1 25	16.7			April 1, 1879.
San Francisco and Livermore	2 00	1 75	12.5			April 1, 1879.
Oakland and Fruit Vale	15	10	33.3			April 1, 1879.
Oakland and Melrose	25	10	60.0			April 1, 1879.
Oakland and Mitchell	40	20	50.0			April 1, 1879.
Oakland and San Leandro	40	30	25.0			April 1, 1879.
Oakland and Lorenzo	65	40	38.5			April 1, 1879.
Oakland and Haywards	65	55	15.4			April 1, 1879.
Oakland and Decoto	1 15	80	30.4			April 1, 1879.
Oakland and Niles	1 15	90	21.7			April 1, 1879.
Oakland and Washington	1 40	1 10	21.4			April 1, 1879.
Oakland and Warm Springs	1 65	1 30	21.2			April 1, 1879.
Oakland and Milpitas	1 90	1 50	21.0			April 1, 1879.
Oakland and San José	2 00	1 65	17.5			April 1, 1879.

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APPENDIX VI—Continued.

Between—	Regular Rate.	Regular Rate Reduced.	Per Cent of Reduction.	Reduced Special First Class.	Per Cent of Reduction.	Remarks.
Oakland and Suñol	$1 40	$1 15	17.9			April 1, 1879.
Oakland and Pleasanton	1 65	1 40	15.2			April 1, 1879.
Oakland and Livermore	1 90	1 65	13.2			April 1, 1879.
Fruit Vale and Melrose	15	10	33.3			April 1, 1879.
Fruit Vale and Mitchell	35	20	42.9			April 1, 1879.
Fruit Vale and San Leandro	40	30	25.0			April 1, 1879.
Fruit Vale and Lorenzo	65	40	38.5			April 1, 1879.
Fruit Vale and Haywards	65	55	15.4			April 1, 1879.
Fruit Vale and Decoto	1 15	80	30.4			April 1, 1879.
Fruit Vale and Niles	1 15	90	21.7			April 1, 1879.
Fruit Vale and Washington	1 40	1 10	21.4			April 1, 1879.
Fruit Vale and Warm Springs	1 65	1 30	21.2			April 1, 1879.
Fruit Vale and Milpitas	1 90	1 50	21.0			April 1, 1879.
Fruit Vale and San José	2 00	1 65	17.5			April 1, 1879.
Fruit Vale and Suñol	1 40	1 15	17.9			April 1, 1879.
Fruit Vale and Pleasanton	1 65	1 40	15.2			April 1, 1879.
Fruit Vale and Livermore	1 90	1 65	13.2			April 1, 1879.
Melrose and Mitchell	25	15	40.0			April 1, 1879.
Melrose and San Leandro	25	20	20.0			April 1, 1879.
Melrose and Lorenzo	50	30	40.0			April 1, 1879.
Melrose and Haywards	50	45	10.0			April 1, 1879.
Melrose and Decoto	1 00	70	30.0			April 1, 1879.
Melrose and Niles	1 00	80	20.0			April 1, 1879.
Melrose and Washington	1 25	1 00	20.0			April 1, 1879.
Melrose and Warm Springs	1 50	1 20	20.0			April 1, 1879.
Melrose and Milpitas	1 75	1 40	20.0			April 1, 1879.
Melrose and San José	2 00	1 55	22.5			April 1, 1879.
Melrose and Suñol	1 25	1 05	16.0			April 1, 1879.
Melrose and Pleasanton	1 50	1 30	13.3			April 1, 1879.
Melrose and Livermore	1 75	1 55	11.4			April 1, 1879.
Mitchell and San Leandro	25	15	40.0			April 1, 1879.
Mitchell and Lorenzo	50	25	50.0			April 1, 1879.
Mitchell and Haywards	50	40	20.0			April 1, 1879.
Mitchell and Decoto	75	70	6.7			April 1, 1879.
Mitchell and Niles	1 00	80	20.0			April 1, 1879.
Mitchell and Warm Springs	1 25	1 20	4.0			April 1, 1879.
Mitchell and Milpitas	1 50	1 40	6.7			April 1, 1879.
Mitchell and San José	1 75	1 55	11.4			April 1, 1879.
Mitchell and Suñol	1 25	1 05	16.0			April 1, 1879.
Mitchell and Pleasanton	1 50	1 30	13.3			April 1, 1879.
Mitchell and Livermore	1 75	1 55	11.4			April 1, 1879.
San Leandro and Lorenzo	25	15	40.0			April 1, 1879.
San Leandro and Decoto	75	55	26.7			April 1, 1879.
San Leandro and Niles	75	70	6.7			April 1, 1879.
San Leandro and Washington	1 00	90	10.0			April 1, 1879.
San Leandro and Warm Springs	1 25	1 10	12.0			April 1, 1879.
San Leandro and Milpitas	1 50	1 25	16.7			April 1, 1879.
San Leandro and San José	1 50	1 45	3.3			April 1, 1879.
San Leandro and Suñol	1 00	95	5.0			April 1, 1879.
San Leandro and Pleasanton	1 25	1 20	4.0			April 1, 1879.
San Leandro and Livermore	1 50	1 45	3.3			April 1, 1879.
Haywards and Decoto	50	30	40.0			April 1, 1879.
Haywards and Niles	50	45	10.0			April 1, 1879.
Haywards and Washington	75	65	13.3			April 1, 1879.
Haywards and Warm Springs	1 00	85	15.0			April 1, 1879.
Haywards and San José	1 25	1 20	4.0			April 1, 1879.
Haywards and Suñol	75	70	6.7			April 1, 1879.
Haywards and Pleasanton	1 00	95	5.0			April 1, 1879.
Haywards and Livermore	1 25	1 20	4.0			April 1, 1879.
Lorenzo and Haywards	25	15	40.0			April 1, 1879.
Lorenzo and Decoto	50	45	10.0			April 1, 1879.
Lorenzo and Niles	75	60	20.0			April 1, 1879.
Lorenzo and Warm Springs	1 00	95	5.0			April 1, 1879.
Lorenzo and Milpitas	1 35	1 15	8.0			April 1, 1879.
Lorenzo and San José	1 50	1 35	10.0			April 1, 1879.
Lorenzo and Suñol	1 00	85	15.0			April 1, 1879.
Lorenzo and Pleasanton	1 25	1 10	12.0			April 1, 1879.
Lorenzo and Livermore	1 50	1 35	10.0			April 1, 1879.
Decoto and Niles	25	15	40.0			April 1, 1879.
Decoto and Washington	50	35	30.0			April 1, 1879.
Decoto and Warm Springs	75	55	26.7			April 1, 1879.
Decoto and Milpitas	1 00	75	25.0			April 1, 1879.
Decoto and San José	1 25	90	28.0			April 1, 1879.
Decoto and Suñol	50	40	20.0			April 1, 1879.
Decoto and Pleasanton	75	65	13.3			April 1, 1879.
Decoto and Livermore	1 00	90	10.0			April 1, 1879.
Niles and Washington	25	20	20.0			April 1, 1879.
Niles and Warm Springs	50	40	20.0			April 1, 1879.
Niles and Milpitas	75	60	20.0			April 1, 1879.
Niles and San José	1 00	75	25.0			April 1, 1879.

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APPENDIX VI—Continued.

Between—	Regular Rate.	Regular Rate Reduced.	Per Cent of Reduction.	Reduced Special First Class.	Per Cent of Reduction.	Remarks.
Washington and Warm Springs	$0 25	$0 20	20.0			April 1, 1879.
Washington and Milpitas	50	40	20.0			April 1, 1879.
Washington and San José	75	65	13.3			April 1, 1879.
Washington and Suñol	50	45	10.0			April 1, 1879.
Washington and Pleasanton	75	70	6.7			April 1, 1879.
Washington and Livermore	1 00	95	5.0			April 1, 1879.
Warm Springs and Milpitas	25	20	20.0			April 1, 1879.
Warm Springs and San José	50	45	10.0			April 1, 1879.
Warm Springs and Suñol	75	65	13.3			April 1, 1879.
Warm Springs and Pleasanton	1 00	90	10.0			April 1, 1879.
Warm Springs and Livermore	1 25	1 15	8.0			April 1, 1879.
Milpitas and Suñol	1 00	85	15.0			April 1, 1879.
Milpitas and Pleasanton	1 25	1 10	12.0			April 1, 1879.
Milpitas and Livermore	1 50	1 35	10.0			April 1, 1879.
San José and Suñol	1 25	1 00	20.0			April 1, 1879.
San José and Pleasanton	1 50	1 25	16.7			April 1, 1879.
San José and Livermore	1 75	1 50	14.3			April 1, 1879.
San Francisco and Lathrop	3 50			$3 00	14.3	April 10, 1879.
Oakland and Lathrop	3 50			3 00	14.3	April 10, 1879.
Oakland and San José	2 00			1 45	27.5	(Santa Cruz) May 30, 1879.
Oakland and San José	2 00			1 45	27.5	(Monterey) May 30, 1879.
Los Angeles and Washington Street	25	15	40.0			Los Angeles & Independence—Aug. 1, '79.
Los Angeles and Main Street	25	15	40.0			Los Angeles & Independence—Aug. 1, '79.
Los Angeles and Park Station	25	25	.0			Los Angeles & Independence—Aug. 1, '79.
Los Angeles and Cienega	50	25	50.0			Los Angeles & Independence—Aug. 1, '79.
Los Angeles and Ballona	75	50	33.3			Los Angeles & Independence—Aug. 1, '79.
Los Angeles and San Vicente	1 00	50	50.0			Los Angeles & Independence—Aug. 1, '79.
Los Angeles and Santa Monica	1 00	50	50.0			Los Angeles & Independence—Aug. 1, '79.
Washington Street and Main Street	25	10	60.0			Los Angeles & Independence—Aug. 1, '79.
Washington Street and Park Station	25	15	40.0			Los Angeles & Indepdndence—Aug. 1, '79.
Washington Street and San Vicente	1 00	50	50.0			Los Angeles & Independence—Aug. 1, '79.
Washington Street and Santa Monica	1 00	50	50.0			Los Angeles & Independence—Aug. 1, '79.
Main Street and Park Station	25	10	60.0			Los Angeles & Independence—Aug. 1, '79.
Main Street and San Vicente	1 00	50	50.0			Los Angeles & Independence—Aug. 1, '79.
Main Street and Santa Monica	1 00	50	50.0			Los Angeles & Independence—Aug. 1, '79.
Park Station and Cienega	25	15	40.0			Los Angeles & Independence—Aug. 1, '79.
Park Station and Ballona	50	35	30.0			Los Angeles & Independence—Aug. 1, '79.
Park Station and San Vicente	1 00	50	50.0			Los Angeles & Independence—Aug. 1, '79.
Park Station and Santa Monica	1 00	50	50.0			Los Angeles & Independence—Aug. 1, '79.
Ballona and San Vicente	50	20	60.0			Los Angeles & Ineependence—Aug. 1, '79.
Ballona and Santa Monica	50	40	20.0			Los Angeles & Independence—Aug. 1, '79.
San Vicente and Santa Monica	25	20	20.0			Los Angeles & Independence—Aug. 1, '79.
Cienega and Ballona	25	20	20.0			Los Angeles & Independence—Aug. 1, '79.
Cienega and San Vicente	50	35	30.0			Los Angeles & Independence—Aug. 1, '79.
Cienega and Santa Monica	75	50	33.3			Los Angeles & Independence—Aug. 1, '79.

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APPENDIX VI—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trp.	Percentage of Reduction.	Remarks.
San Francisco and Milton	$11 00	$9 00	18.2	Five day, January 1, 1879.
Oakland and Milton	11 00	9 00	18.2	Five day, January 1, 1879.
San Francisco and Calistoga	7 00	5 00	28.6	(Geysers), March 18, 1879.
San Francisco and Napa	4 00	3 00	25.0	Five day, March 20, 1879.
San Francisco and Yountville	5 00	4 00	20.0	Five day, March 20, 1879.
San Francisco and Oakville	5 50	4 50	18.2	Five day, March 20, 1879.
San Francisco and Rutherford	5 50	4 50	18.2	Five day, March 20, 1879.
San Francisco and St. Helena	6 00	5 00	16.7	Five day, March 20, 1879.
San Francisco and Calistoga	7 00	6 00	14.3	Five day, March 20, 1879.
San Francisco and San José	4 00	2 50	37.5	Sunday excursion, April 5, 1879.
Oakland and San José	4 00	2 50	37.5	Sunday excursion, April 5, 1879.
Melrose and San José	4 00	2 50	37.5	Sunday excursion, April 5, 1879.
San Francisco and San José	4 00	3 25	18.8	Five day, April 5, 1879.
San Francisco and Anaheim	49 00	37 00	24.5	Twenty day, May 1, 1879
San Francisco and Santa Ana	50 00	38 00	24.0	Twenty day, May 1, 1879.
San Francisco and Colton	52 00	40 00	23.1	Twenty day, May 1, 1879.
San Francisco and Davisville	7 50	5 00	33.3	Five day, May 27, 1879.
San Francisco and Dixon	6 50	5 00	23.1	Five day, May 27, 1879.
San Francisco and Batavia	6 00	5 00	16.7	Five day, May 27, 1879.
San Francisco and Elmira	5 50	5 00	9.1	Five day, May 27, 1879.
San Francisco and Downey	47 00	35 00	25.5	Twenty day, June 5, 1879.
San Francisco and Monte	47 50	35 50	25.3	Twenty day, June 10, 1879.
San Francisco and Savanna	47 50	35 50	25.3	Twenty day, September 1, 1879.
San Francisco and San Gabriel	47 00	35 00	25.5	Twenty day, September 1, 1879.
San Francisco and Pomona	49 50	37 50	24.2	Twenty day, September 25, 1879.
San Francisco and Antioch	3 00	2 50	16.7	Sunday excursion, November 18, 1879.
San Francisco and Brentwood	3 90	2 75	29.5	Sunday excursion, November 18, 1879.
San Francisco and Bethany	5 50	3 50	36.4	Sunday excursion, November 18, 1879.
San Francisco and Tracy	6 30	3 75	40.5	Sunday excursion, November 18, 1879.
San Francisco and Banta	6 50	4 00	38.5	Sunday excursion, November 18, 1879.
Oakland and Antioch	3 00	2 50	16.7	Sunday excursion, November 18, 1879.
Oakland and Brentwood	3 90	2 75	29.5	Sunday excursion, November 18, 1879.
Oakland and Bethany	5 50	3 50	36.4	Sunday excursion, November 18, 1879.
Oakland and Tracy	6 30	3 75	40.5	Sunday excursion, November 18, 1879.
Oakland and Banta	6 50	4 00	38.5	Sunday excursion, November 18, 1879.
Oakland and San José	4 00	2 20	45.0	(Santa Cruz), five day, May 30, 1879.
Oakland and San José	4 00	2 20	45.0	(Monterey), five day, May 30, 1879.

APPENDIX VI—Continued.

Between—	Regular Rate.	Reduced or Second Class.	Per Cent of Reduction.	Reduced or Third Class.	Per Cent of Reduction.	Remarks.
San Francisco and Los Angeles	$23 00	$18 00	21.7	$12 00	47.8	February 1, 1879.
San Francisco and Yuma	45 00	35 00	22.2	25 00	44.4	February 1, 1879.
Oakland and Los Angeles	23 00	18 00	21.7	12 00	47.8	February 1, 1879.
Oakland and Yuma	45 00	35 00	22.2	25 00	44.4	February 1, 1879.
San José and Los Angeles	23 00	18 00	21.7	12 00	47.8	February 1, 1879.
San José and Yuma	45 00	35 00	22.2	25 00	44.4	February 1, 1879.
Lathrop and Los Angeles	23 00	18 00	21.7	12 00	47.8	February 1, 1879.
Lathrop and Yuma	45 00	35 00	22.2	25 00	44.4	February 1, 1879.
Stockton and Los Angeles	23 00	18 00	21.7	12 00	47.8	February 1, 1879.
Stockton and Yuma	45 00	35 00	22.2	25 00	44.4	February 1, 1879.
Sacramento and Los Angeles	23 00	18 00	21.7	12 00	47.8	February 1, 1879.
Sacramento and Yuma	45 00	35 00	22.2	25 00	44.4	February 1, 1879.
Oakland and Stockton	3 50	1 50	57.1			April 10, 1879.
San Francisco and Stockton	3 50	1 50	57.1			April 10, 1879.
San Francisco and Lathrop	3 50	1 50	57.1			April 10, 1879.
Oakland and Lathrop	3 50	1 50	57.1			April 10, 1879.
San Francisco and Fairfield	2 25	1 50	33.3			May 27, 1879.
San Francisco and French Camp	3 50	1 50	57.1			August 9, 1879.
San Francisco and Los Medoras	1 50	1 00	33.3			(Somersville) December 9, 1879.
Oakland and Los Medoras	1 50	1 00	33.3			(Somersville) December 9, 1879.
San Francisco and Vallejo	1 00	75	25.0			December 28, 1879.
San Francisco and Benicia	1 00	75	25.0			December 28, 1879.

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APPENDIX VI—Continued.

Monthly Commutation.

Between—	Regular Rate.	Reduced Rate.	Per Cent of Reduction.	Number of Trips.	Remarks.
San Francisco and Livermore	$90 00	$20 00	77.7	60	January 1, 1879.
San Francisco and Pleasanton	105 00	20 00	80.9	60	January 1, 1879.
San Francisco and Point Isabel	21 00	4 50	78.6	60	February 1, 1879.
San Francisco and Stege	24 00	5 50	77.1	60	February 1, 1879.
San Francisco and Decoto	54 00	7 50	86.1	60	May 1, 1879.
San Francisco and Niles	60 00	9 00	85.0	60	May 1, 1879.
San Francisco and Martinez	60 00	12 00	80.0	60	December 1, 1879.
San Francisco and Benicia	60 00	12 00	80.0	60	December 1, 1879.
San Francisco and Seminary Park	15 00	4 00	73.3	60	December 1, 1879.

Average Reduction.

Regular first class	23.0 per cent of tariff rates.
Special first class	19.6 per cent of tariff rates.
Special second class	31.8 per cent of tariff rates.
Special third class	46.1 per cent of tariff rates.
Special round trip	37.4 per cent of tariff rates.
Total	27.8 per cent of tariff rates.

APPENDIX VII.

STATEMENT

Showing Reductions in Local Ticket Rates within the State of California since January 1, 1880.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
San Francisco and Kingsburg*	$12 75			$12 00	5.9
San Francisco and Cross Creek	13 30			12 00	9.8
San Francisco and Goshen	13 70			12 00	12.4
San Francisco and Hanford	14 60			12 00	18.0
San Francisco and Lemoore	15 15			12 00	20.8
San Francisco and Tagus	14 10			12 00	14.9
San Francisco and Tulare	14 45			12 00	16.9
San Francisco and Delano	16 60			12 00	27.7
San Francisco and Sumner	17 00			12 00	29.4
San Francisco and Caliente	18 00			12 00	33.3
San Francisco and Keene	18 95	$18 00	5.0	12 00	36.7
San Francisco and Tehachapi	19 75	18 00	9.0	12 00	39.2
San Francisco and Mojave	21 15	18 00	15.0	12 00	43.2
San Francisco and Ravenna	23 00	18 00	21.8	12 00	47.8
San Francisco and Newhall	23 00	18 00	21.8	12 00	47.8
San Francisco and Tunnel	23 00	18 00	21.8	12 00	47.8
San Francisco and San Fernando	23 00	18 00	21.8	12 00	47.8
Stock Yards and Kingsburg	12 75			12 00	5.9
Stock Yards and Cross Creek	13 30			12 00	9.8
Stock Yards and Goshen	13 70			12 00	12.4
Stock Yards and Hanford	14 60			12 00	18.0
Stock Yards and Lemoore	15 15			12 00	20.8
Stock Yards and Tagus	14 10			12 00	14.9
Stock Yards and Tulare	14 45			12 00	16.9
Stock Yards and Delano	16 60			12 00	27.7
Stock Yards and Sumner	17 00			12 00	29.4
Stock Yards and Caliente	18 00			12 00	33.3
Stock Yards and Keene	18 95	18 00	5.0	12 00	36.7
Stock Yards and Tehachapi	19 75	18 00	9.0	12 00	39.2
Stock Yards and Mojave	21 15	18 00	15.0	12 00	43.2
Stock Yards and Ravenna	23 00	18 00	21.8	12 00	47.8
Stock Yards and Newhall	23 00	18 00	21.8	12 00	47.8
Stock Yards and Tunnel	23 00	18 00	21.8	12 00	47.8
Stock Yards and San Fernando	23 00	18 00	21.8	12 00	47.8
Stock Yards and Los Angeles	23 00	18 00	21.8	12 00	47.8
West Berkeley, Stege, San Pablo, Pinole	Same as Stock Yards.				
Vallejo Junction and Kingsburg	12 55			12 00	4.4
Vallejo Junction and Cross Creek	13 10			12 00	8.4
Vallejo Junction and Goshen	13 50			12 00	11.1
Vallejo Junction and Hanford	14 40			12 00	16.7
Vallejo Junction and Lemoore	14 95			12 00	19.7
Vallejo Junction and Tagus	13 90			12 00	13.6
Vallejo Junction and Tulare	14 25			12 00	15.8
Vallejo Junction and Delano	16 40			12 00	26.8
Vallejo Junction and Sumner	17 00			12 00	29.4
Vallejo Junction and Caliente	18 00			12 00	33.3

* In effect January 1, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Vallejo Junction and Keene*	$18 95	$18 00	5.0	$12 00	36.7
Vallejo Junction and Tehachapi	19 75	18 00	9.0	12 00	39.2
Vallejo Junction and Mojave	21 15	18 00	15.6	12 00	43.2
Vallejo Junction and Ravenna	23 00	18 00	21.8	12 00	47.8
Vallejo Junction and Newhall	23 00	18 00	21.8	12 00	47.8
Vallejo Junction and Tunnel	23 00	18 00	21.8	12 00	47.8
Vallejo Junction and San Fernando	23 00	18 00	21.8	12 00	47.8
Vallejo Junction and Los Angeles	23 00	18 00	21.8	12 00	47.8
Port Costa and Kingsburg	12 45			12 00	3.6
Port Costa and Cross Creek	13 00			12 00	7.7
Port Costa and Goshen	13 40			12 00	1.04
Port Costa and Hanford	14 30			12 00	16.1
Port Costa and Lemoore	14 85			12 00	19.2
Port Costa and Tagus	13 80			12 00	13.0
Port Costa and Tulare	14 15			12 00	15.2
Port Costa and Delano	16 30			12 00	26.4
Port Costa and Sumner	17 00			12 00	29.4
Port Costa and Caliente	18 00			12 00	33·3
Port Costa and Keene	18 95	18 00	5.0	12 00	36.7
Port Costa and Tehachapi	19 75	18 00	9.0	12 00	39.2
Port Costa and Mojave	21 15	18 00	15.0	12 00	43.2
Port Costa and Ravenna	23 00	18 00	21.8	12 00	47.8
Port Costa and Newhall	23 00	18 00	21.8	12 00	47.8
Port Costa and Tunnel	23 00	18 00	21.8	12 00	47.8
Port Costa and San Fernando	23 00	18 00	21.8	12 00	47.8
Port Costa and Los Angeles	23 00	18 00	21.8	12 00	47.8
Martinez and Cross Creek	12 85			12 50	6.6
Martinez and Goshen	13 25			12 50	9.4
Martinez and Hanford	14 15			12 50	15.2
Martinez and Lemoore	14 70			12 50	18.4
Martinez and Tagus	13 65			12 50	12.1
Martinez and Tulare	14 00			12 50	14.3
Martinez and Delano	16 15			12 50	25.7
Martinez and Sumner	17 00			12 50	29.4
Martinez and Caliente	18 00			12 50	33.3
Martinez and Keene	18 95	18 00	5.0	12 00	36.7
Martinez and Tehachapi	19 75	18 00	9.0	12 00	39.2
Martinez and Mojave	21 15	18 00	15.0	12 00	43.2
Martinez and Ravenna	23 00	18 00	21.8	12 00	47.8
Martinez and Newhall	23 00	18 00	21.8	12 00	47.8
Martinez and Tunnel	23 00	18 00	21.8	12 00	47.8
Martinez and San Fernando	23 00	18 00	21.8	12 00	47.8
Martinez and Los Angeles	23 00	18 00	21.8	12 00	47.8
Avon and Cross Creek	12 80			12 00	6.2
Avon and Goshen	13 20			12 00	9.1
Avon and Hanford	14 10			12 00	14.9
Avon and Lemoore	14 65			12 00	18.1
Avon and Tagus	13 60			12 00	11.7
Avon and Tulare	13 95			12 00	14.0
Avon and Delano	16 10			12 00	25.5
Avon and Sumner	17 00			12 00	29.4
Avon and Caliente	18 00			12 00	33.3
Avon and Keene	18 95	18 00	5.0	12 00	36.7
Avon and Tehachapi	19 75	18 00	9.0	12 00	39.2
Avon and Mojave	21 15	18 00	15.0	12 00	43.2
Avon and Ravenna	23 00	18 00	21.8	12 00	47.8
Avon and Newhall	23 00	18 00	21.8	12 00	47.8
Avon and Tunnel	23 00	18 00	21.8	12 00	47.8
Avon and San Fernando	23 00	18 00	21.8	12 00	47.8
Avon and Los Angeles	23 00	18 00	21.8	12 00	47.8
Bay Point and Cross Creek	12 70			12 00	5.5
Bay Point and Goshen	13 10			12 00	8.4
Bay Point and Hanford	14 00			12 00	14.3
Bay Point and Lemoore	14 55			12 00	17.5
Bay Point and Tagus	13 50			12 00	11.1

*In effect January 1, 1880.

APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Bay Point and Tulare*	$13 85			$12 00	13.4
Bay Point and Delano	16 00			12 00	25.0
Bay Point and Sumner	17 00			12 00	29.4
Bay Point and Caliente	18 00			12 00	33.3
Bay Point and Keene	18 95	$18 00	5.0	12 00	36.7
Bay Point and Tehachapi	19 75	18 00	9.0	12 00	39.2
Bay Point and Mojave	21 15	18 00	15.0	12 00	43.2
Bay Point and Ravenna	23 00	18 00	21.8	12 00	47.8
Bay Point and Newhall	23 00	18 00	21.8	12 00	47.8
Bay Point and Tunnel	23 00	18 00	21.8	12 00	47.8
Bay Point and San Fernando	23 00	18 00	21.8	12 00	47.8
Bay Point and Los Angeles	23 00	18 00	21.8	12 00	47.8
Cornwall and Goshen	12 75			12 00	5.9
Cornwall and Hanford	13 65			12 00	12.1
Cornwall and Lemoore	14 20			12 00	15.5
Cornwall and Tagus	13 15			12 00	8.7
Cornwall and Tulare	13 50			15 00	11.1
Cornwall and Delano	15 65			12 00	23.3
Cornwall and Sumner	17 00			12 00	29.4
Cornwall and Caliente	18 00			12 00	33.3
Cornwall and Keene	18 95	18 00	5.0	12 00	36.7
Cornwall and Tehachapi	19 75	18 00	9.0	12 00	39.2
Cornwall and Mojave	21 15	18 00	15.0	12 00	43.2
Cornwall and Ravenna	23 00	18 00	21.8	12 00	47.8
Cornwall and Newhall	23 00	18 00	21.8	12 00	47.8
Cornwall and Tunnel	23 00	18 00	21.8	12 00	47.8
Cornwall and San Fernando	23 00	18 00	21.8	12 00	47.8
Cornwall and Los Angeles	23 00	18 00	21.8	12 00	47.8
Antioch and Goshen	12 50			12 00	4.0
Antioch and Hanford	13 40			12 00	10.4
Antioch and Lemoore	13 95			12 00	14.0
Antioch and Tagus	12 90			12 00	7.0
Antioch and Tulare	13 25			12 00	9.4
Antioch and Delano	15 40			12 00	22.0
Antioch and Sumner	17 00			12 00	29.4
Antioch and Caliente	18 00			12 00	33.3
Antioch and Keene	18 95	18 00	5.0	12 00	36.7
Antioch and Tehachapi	19 75	18 00	9.0	12 00	39.2
Antioch and Mojave	21 15	18 00	15.0	12 00	43.2
Antioch and Ravenna	23 00	18 00	21.8	12 00	47.8
Antioch and Newhall	23 00	18 00	21.8	12 00	47.8
Antioch and Tunnel	23 00	18 00	21.8	12 00	47.8
Antioch and San Fernando	23 00	18 00	21.8	12 00	47.8
Antioch and Los Angeles	23 00	18 00	21.8	12 00	47.8
Brentwood and Tulare	12 80			12 00	6.2
Brentwood and Delano	14 95			12 00	19.7
Brentwood and Sumner	17 00			12 00	29.4
Brentwood and Caliente	18 00			12 00	33.3
Brentwood and Keene	18 95	18 00	5	12 00	36.7
Brentwood and Tehachapi	19 75	18 00	9	12 00	39.2
Brentwood and Mojave	21 15	18 00	15	12 00	43.2
Brentwood and Ravenna	23 00	18 00	21.8	12 00	47.8
Brentwood and Newhall	23 00	18 00	21.8	12 00	47.8
Brentwood and Tunnel	23 00	18 00	21.8	12 00	47.8
Brentwood and San Fernando	23 00	18 00	21.8	12 00	47.8
Brentwood and Los Angeles	23 00	18 00	21.8	12 00	47.8
Byron and Tulare	12 50			12 00	4.0
Byron and Delano	14 65			12 00	18.1
Byron and Sumner	16 95			12 00	29.2
Byron and Caliente	18 00			12 00	33.3
Byron and Keene	18 95	18 00	5.0	12 00	36.7
Byron and Tehachapi	19 75	18 00	9.0	12 00	39.2
Byron and Mojave	21 15	18 00	15.0	12 00	43.2
Byron and Ravenna	23 00	18 00	21.8	12 00	47.8
Byron and Newhall	23 00	18 00	21.8	12 00	47.8

*In effect January 1, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Byron and Tunnel*	$23 00	$18 00	21.8	$12 00	47.8
Byron and San Fernando	23 00	18 00	21.8	12 00	47.8
Byron and Los Angeles	23 00	18 00	21.8	12 00	47.8
Bethany and Delano	14 15			12 00	15.2
Bethany and Sumner	16 45			12 00	27.0
Bethany and Caliente	17 80			12 00	32.6
Bethany and Keene	18 75	18 00	4.0	12 00	36.0
Bethany and Tehachapi	19 55	18 00	7.9	12 00	38.6
Bethany and Mojave	20 95	18 00	14.1	12 00	42.7
Bethany and Ravenna	23 00	18 00	21.8	12 00	47.8
Bethany and Newhall	23 00	18 00	21.8	12 00	47.8
Bethany and Tunnel	23 00	18 00	21.8	12 00	47.8
Bethany and San Fernando	23 00	18 00	21.8	12 00	47.8
Bethany and Los Angeles	23 00	18 00	21.8	12 00	47.8
Melrose and Kingsburg	12 75			12 00	5.9
Melrose and Cross Creek	13 30			12 00	9.8
Melrose and Goshen	13 70			12 00	12.4
Melrose and Hanford	14 60			12 00	18.0
Melrose and Lemoore	15 15			12 00	20.8
Melrose and Tagus	14 10			12 00	14.9
Melrose and Tulare	14 45			12 00	16.9
Melrose and Delano	16 60			12 00	27.7
Melrose and Sumner	17 00			12 00	29.4
Melrose and Caliente	18 00			12 00	33.3
Melrose and Keene	18 95	18 00	5.0	12 00	36.7
Melrose and Tehachapi	19 75	18 00	9.0	12 00	39.2
Melrose and Mojave	21 15	18 00	15.0	12 00	43.2
Melrose and Ravenna	23 00	18 00	21.8	12 00	47.8
Melrose and Newhall	23 00	18 00	21.8	12 00	47.8
Melrose and Tunnel	23 00	18 00	21.8	12 00	47.8
Melrose and San Fernando	23 00	18 00	21.8	12 00	47.8
Melrose and Los Angeles	23 00	18 00	21.8	12 00	47.8
San Leandro and Kingsburg	12 50			12 00	4.0
San Leandro and Cross Creek	13 05			12 00	8.0
San Leandro and Goshen	13 45			12 00	10.8
San Leandro and Hanford	14 35			12 00	16.4
San Leandro and Lemoore	14 90			12 00	19.5
San Leandro and Tagus	13 85			12 00	13.4
San Leandro and Tulare	14 20			12 00	15.5
San Leandro and Delano	16 35			12 00	26.6
San Leandro and Sumner	17 00			12 00	29.4
San Leandro and Caliente	18 00			12 00	33.3
San Leandro and Keene	18 95	18 00	5.0	12 00	36.7
San Leandro and Tehachapi	19 75	18 00	9.0	12 00	39.2
San Leandro and Mojave	21 15	18 00	15.0	12 00	43.2
San Leandro and Ravenna	23 00	18 00	21.8	12 00	47.8
San Leandro and Newhall	23 00	18 00	21.8	12 00	47.8
San Leandro and Tunnel	23 00	18 00	21.8	12 00	47.8
San Leandro and San Fernando	23 00	18 00	21.8	12 00	47.8
San Leandro and Los Angeles	23 00	18 00	21.8	12 00	47.8
Lorenzo—Same as San Leandro.					
Haywards and Cross Creek	12 80			12 00	6.3
Haywards and Goshen	13 20			12 00	9.1
Haywards and Hanford	14 10			12 00	14.9
Haywards and Lemoore	14 65			12 00	18.1
Haywards and Tagus	13 60			12 00	11.8
Haywards and Tulare	13 95			12 00	13.9
Haywards and Delano	16 10			12 00	25.4
Haywards and Sumner	17 00			12 00	29.4
Haywards and Caliente	18 00			12 00	33.3
Haywards and Keene	18 95	18 00	5.0	12 00	36.7
Haywards and Tehachapi	19 75	18 00	9.0	12 00	39.2
Haywards and Mojave	21 15	18 00	15.0	12 00	43.2
Haywards and Ravenna	23 00	18 00	21.8	12 00	47.8
Haywards and Newhall	23 00	18 00	21.8	12 00	47.8

* In effect January 1, 1880.

APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Haywards and Tunnel*	$23 00	$18 00	21.8	$12 00	47.8
Haywards and San Fernando	23 00	18 00	21.8	12 00	47.8
Haywards and Los Angeles	23 00	18 00	21.8	12 00	47.8
Decoto and Cross Creek	12 55			12 00	4.4
Decoto and Goshen	12 95			12 00	7.3
Decoto and Hanford	13 85			12 00	13.4
Decoto and Lemoore	14 40			12 00	16.7
Decoto and Tagus	13 35			12 00	10.1
Decoto and Tulare	13 70			12 00	12.4
Decoto and Delano	15 85			12 00	24.3
Decoto and Sumner	17 00			12 00	29.4
Decoto and Caliente	18 00			12 00	33.3
Decoto and Keene	18 95	18 00	5.0	12 00	36.7
Decoto and Tehachapi	19 75	18 00	9.0	12 00	39.2
Decoto and Mojave	21 15	18 00	15.0	12 00	43.2
Decoto and Ravenna	23 00	18 00	21.8	12 00	47.8
Decoto and Newhall	23 00	18 00	21.8	12 00	47.8
Decoto and Tunnel	23 00	18 00	21.8	12 00	47.8
Decoto and San Fernando	23 00	18 00	21.8	12 00	47.8
Decoto and Los Angeles	23 00	18 00	21.8	12 00	47.8
Niles and Goshen	12 70			12 50	5.5
Niles and Hanford	13 60			12 00	11.8
Niles and Lemoore	14 15			12 00	15.2
Niles and Tagus	13 10			12 00	8.4
Niles and Tulare	13 45			12 00	10.8
Niles and Delano	15 60			12 00	23.1
Niles and Sumner	17 00			12 00	29.4
Niles and Caliente	18 00			12 00	33.3
Niles and Keene	18 95	18 00	5.0	12 00	36.7
Niles and Tehachapi	19 75	18 00	9.0	12 00	39.2
Niles and Mojave	21 15	18 00	15.0	12 00	43.2
Niles and Ravenna	23 00	18 00	21.8	12 00	47.8
Niles and Newhall	23 00	18 00	21.8	12 00	47.8
Niles and Tunnel	23 00	18 00	21.8	12 00	47.8
Niles and San Fernando	23 00	18 00	21.8	12 00	47.8
Niles and Los Angeles	23 00	18 00	21.8	12 00	47.8
Washington and Cross Creek	12 55			12 00	4.4
Washington and Goshen	12 95			12 00	7.3
Washington and Hanford	13 85			12 00	13.4
Washington and Lemoore	14 40			12 00	16.7
Washington and Tagus	13 35			12 00	10.1
Washington and Tulare	13 70			12 00	12.4
Washington and Delano	15 85			12 00	24.3
Washington and Sumner	17 00			12 00	29.4
Washington and Caliente	18 00			12 00	33.3
Washington and Keene	18 95	18 00	5.0	12 00	36.7
Washington and Tehachapi	19 75	18 00	9.0	12 00	39.2
Washington and Mojave	21 15	18 00	15.0	12 00	43.2
Washington and Ravenna	23 00	18 00	21.8	12 00	47.8
Washington and Newhall	23 00	18 00	21.8	12 00	47.8
Washington and Tunnel	23 00	18 00	21.8	12 00	47.8
Washington and San Fernando	23 00	18 00	21.8	12 00	47.8
Washington and Los Angeles	23 00	18 00	21.8	12 00	47.8
San José and Kingsburg	12 75			12 00	5.9
San José and Cross Creek	13 30			12 00	9.8
San José and Goshen	13 70			12 00	12.4
San José and Hanford	14 60			12 00	18.0
San José and Lemoore	15 15			12 00	20.8
San José and Tagus	14 10			12 00	14.9
San José and Tulare	14 45			12 00	16.9
San José and Delano	16 60			12 00	27.7
San José and Sumner	17 00			12 00	29.4
San José and Caliente	18 00			12 00	33.3
San José and Keene	18 95	18 00	5.0	12 00	36.7
San José and Tehachapi	19 75	18 00	9.0	12 00	39.2

* In effect January 1, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
San José and Mojave*	$21 15	$18 00	15.0	$12 00	43.2
San José and Ravenna	23 00	18 00	21.8	12 00	47.8
San José and Newhall	23 00	18 00	21.8	12 00	47.8
San José and Tunnel	23 00	18 00	21.8	12 00	47.8
San José and San Fernando	23 00	18 00	21.8	12 00	47.8
Suñol and Tulare	13 20			12 00	9.1
Suñol and Delano	15 35			12 00	21.8
Suñol and Sumner	17 00			12 00	29.4
Suñol and Caliente	18 00			12 00	33.3
Suñol and Keene	18 95	18 00	5.0	12 00	36.7
Suñol and Tehachapi	19 75	18 00	9.0	12 00	39.2
Suñol and Mojave	21 15	18 00	15.0	12 00	43.2
Suñol and Ravenna	23 00	18 00	21.8	12 00	47.8
Suñol and Newhall	23 00	18 00	21.8	12 00	47.8
Suñol and Tunnel	23 00	18 00	21.8	12 00	47.8
Suñol and San Fernando	23 00	18 00	21.8	12 00	47.8
Suñol and Los Angeles	23 00	18 00	21.8	12 00	47.8
Pleasanton and Tulare	12 95			12 00	7.3
Pleasanton and Delano	15 10			12 00	20.5
Pleasanton and Sumner	17 00			12 00	29.4
Pleasanton and Caliente	18 00			12 00	33.3
Pleasanton and Keene	18 95	18 00	5.0	12 00	36.7
Pleasanton and Tehachapi	19 75	18 00	9.0	12 00	39.2
Pleasanton and Mojave	21 15	18 00	15.0	12 00	43.2
Pleasanton and Ravenna	23 00	18 00	21.8	12 00	47.8
Pleasanton and Newhall	23 00	18 00	21.8	12 00	47.8
Pleasanton and Tunnel	23 00	18 00	21.8	12 00	47.8
Pleasanton and San Fernando	23 00	18 00	21.8	12 00	47.8
Pleasanton and Los Angeles	23 00	18 00	21.8	12 00	47.8
Livermore and Tulare	12 70			12 00	5.5
Livermore and Delano	14 85			12 00	19.2
Livermore and Sumner	17 00			12 00	29.4
Livermore and Caliente	18 00			12 00	33.3
Livermore and Keene	18 95	18 00	5.0	12 00	36.7
Livermore and Tehachapi	19 75	18 00	9.0	12 00	39.2
Livermore and Mojave	21 15	18 00	15.0	12 00	43.2
Livermore and Ravenna	23 00	18 00	21.8	12 00	47.8
Livermore and Newhall	23 00	18 00	21.8	12 00	47.8
Livermore and Tunnel	23 00	18 00	21.8	12 00	47.8
Livermore and San Fernando	23 00	18 00	21.8	12 00	47.8
Livermore and Los Angeles	23 00	18 00	21.8	12 00	47.8
Ellis and Delano	13 85			12 00	13.4
Ellis and Sumner	16 15			12 00	25.7
Ellis and Caliente	17 50			12 00	31.4
Ellis and Keene	18 45	18 00		12 00	35.0
Ellis and Tehachapi	19 25	18 00	6.5	12 00	37.6
Ellis and Mojave	20 65	18 00	12.8	12 00	41.9
Ellis and Ravenna	23 00	18 00	21.8	12 00	47.8
Ellis and Newhall	23 00	18 00	21.8	12 00	47.8
Ellis and Tunnel	23 00	18 00	21.8	12 00	47.8
Ellis and San Fernando	23 00	18 00	21.8	12 00	47.8
Ellis and Los Angeles	23 00	18 00	21.8	12 00	47.8
Tracy and Delano	13 75			12 00	12.7
Tracy and Sumner	16 05			12 00	25.2
Tracy and Caliente	17 40			12 00	31.0
Tracy and Keene	18 35	18 00		12 00	34.6
Tracy and Tehachapi	19 15	18 00	6.0	12 00	37.3
Tracy and Mojave	20 55	18 00	12.4	12 00	41.6
Tracy and Ravenna	23 00	18 00	21.8	12 00	47.8
Tracy and Newhall	23 00	18 00	21.8	12 00	47.8
Tracy and Tunnel	23 00	18 00	21.8	12 00	47.8
Tracy and San Fernando	23 00	18 00	21.8	12 00	47.8
Tracy and Los Angeles	23 00	18 00	21.8	12 00	47.8
Banta and Delano	13 60			12 00	11.7
Banta and Sumner	15 90			12 00	24.5

*In effect January 1, 1880.

APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Banta and Caliente*	$17 25			$12 00	30.4
Banta and Keene	18 20	$18 00		12 00	34.1
Banta and Tehachapi	19 00	18 00	5.2	12 00	36.8
Banta and Mojave	20 40	18 00	11.8	12 00	41.2
Banta and Ravenna	23 00	18 00	21.8	12 00	47.8
Banta and Newhall	23 00	18 00	21.8	12 00	47.8
Banta and Tunnel	23 00	18 00	21.8	12 00	47.8
Banta and San Fernando	23 00	18 00	21.8	12 00	47.8
Banta and Los Angeles	23 00	18 00	21.8	12 00	47.8
Lathrop and Delano	13 10			12 00	8.4
Lathrop and Sumner	15 40			12 00	22.0
Lathrop and Caliente	16 75			12 00	28.4
Lathrop and Keene	17 70			12 00	32.2
Lathrop and Tehachapi	18 50	18 00		12 00	35.1
Lathrop and Mojave	19 00	18 00	9.5	12 00	39.7
Lathrop and Ravenna	23 00	18 00	21.8	12 00	47.8
Lathrop and Newhall	23 00	18 00	21.8	12 00	47.8
Lathrop and Tunnel	23 00	18 00	21.8	12 00	47.8
Lathrop and San Fernando	23 00	18 00	21.8	12 00	47.8
Stockton and Delano	13 60			12 00	11.7
Stockton and Sumner	15 90			12 00	24.5
Stockton and Caliente	17 25			12 00	30.4
Stockton and Keene	18 20	18 00		12 00	34.1
Stockton and Tehachapi	19 00	18 00	5.2	12 00	36.8
Stockton and Mojave	20 40	18 00	11.8	12 00	41.2
Stockton and Ravenna	23 00	18 00	21.8	12 00	47.8
Stockton and Newhall	23 00	18 00	21.8	12 00	47.8
Stockton and Tunnel	23 00	18 00	21.8	12 00	47.8
Stockton and San Fernando	23 00	18 00	21.8	12 00	47.8
Lodi and Delano	14 35			12 00	16.4
Lodi and Sumner	16 65			12 00	27.9
Lodi and Caliente	18 00			12 00	33.3
Lodi and Keene	18 95	18 00	5.0	12 00	36.7
Lodi and Tehachapi	19 75	18 00	9.0	12 00	39.2
Lodi and Mojave	21 15	13 00	15.0	12 00	43.2
Lodi and Ravenna	23 00	18 00	21.8	12 00	47.8
Lodi and Newhall	23 00	18 00	21.8	12 00	47.8
Lodi and Tunnel	23 00	18 00	21.8	12 00	47.8
Lodi and San Fernando	23 00	18 00	21.8	12 00	47.8
Lodi and Los Angeles	23 00	18 00	21.8	12 00	47.8
Galt and Delano	14 60			12 00	18.0
Galt and Sumner	16 90			12 00	29.0
Galt and Caliente	18 00			12 00	33.3
Galt and Keene	18 95	18 00	5.0	12 00	36.7
Galt and Tehachapi	19 75	18 00	9.0	12 00	39.2
Galt and Mojave	21 15	18 00	15.0	12 00	43.2
Galt and Ravenna	23 00	18 00	21.8	12 00	47.8
Galt and Newhall	23 00	18 00	21.8	12 00	47.8
Galt and Tunnel	23 00	18 00	21.8	12 00	47.8
Galt and San Fernando	23 00	18 00	21.8	12 00	47.8
Galt and Los Angeles	23 00	18 00	21.8	12 00	47.8
Elk Grove and Tulare	13 20			12 00	9.1
Elk Grove and Delano	15 35			12 00	21.8
Elk Grove and Sumner	17 00			12 00	29.4
Elk Grove and Caliente	18 00			12 00	33.3
Elk Grove and Keene	18 95	18 00	5.0	12 00	36.7
Elk Grove and Tehachapi	19 75	18 00	9.0	12 00	39.2
Elk Grove and Mojave	21 15	18 00	15.0	12 00	43.2
Elk Grove and Ravenna	23 00	18 00	21.8	12 00	47.8
Elk Grove and Newhall	23 00	18 00	21.8	12 00	47.8
Elk Grove and Tunnel	23 00	18 00	21.8	12 00	47.8
Elk Grove and San Fernando	23 00	18 00	21.8	12 00	47.8
Elk Grove and Los Angeles	23 00	18 00	21.8	12 00	47.8
Florin and Tulare	13 45			12 00	10.8
Florin and Delano	15 60			12 00	23.1

*In effect January 1, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Florin and Sumner*	$17 00			$12 00	29.4
Florin and Caliente	18 00			12 00	33.3
Florin and Keene	18 95	$18 00	5.0	12 00	36.7
Florin and Tehachapi	19 75	18 00	9.0	12 00	39.2
Florin and Mojave	21 15	18 00	15.0	12 00	43.2
Florin and Ravenna	23 00	18 00	21.8	12 00	47.8
Florin and Newhall	23 00	18 00	21.8	12 00	47.8
Florin and Tunnel	23 00	18 00	21.8	12 00	47.8
Florin and San Fernando	23 00	18 00	21.8	12 00	47.8
Florin and Los Angeles	23 00	18 00	21.8	12 00	47.8
Brighton—Same as Florin.					
Sacramento and Tulare	13 45			12 00	10.8
Sacramento and Delano	15 60			12 00	23.1
Sacramento and Sumner	17 00			12 00	29.4
Sacramento and Caliente	18 00			12 00	33.3
Sacramento and Keene	18 95	18 00	5.0	12 00	36.7
Sacramento and Tehachapi	19 75	18 00	9.0	12 00	39.2
Sacramento and Mojave	21 15	18 00	15.0	12 00	43.2
Sacramento and Ravenna	23 00	18 00	21.8	12 00	47.8
Sacramento and Newhall	23 00	18 00	21.8	12 00	47.8
Sacramento and Tunnel	23 00	18 00	21.8	12 00	47.8
Sacramento and San Fernando	23 00	18 00	21.8	12 00	47.8
Morrano and Delano	12 70			12 00	5.5
Morrano and Sumner	15 00			12 00	20.0
Morrano and Caliente	16 55			12 00	27.5
Morrano and Keene	17 50			12 00	31.4
Morrano and Tehachapi	18 30	18 00		12 00	34.4
Morrano and Mojave	19 70	18 00	8.6	12 00	39.2
Morrano and Ravenna	23 00	18 00	21.8	12 00	47.8
Morrano and Newhall	23 00	18 00	21.8	12 00	47.8
Morrano and Tunnel	23 00	18 00	21.8	12 00	47.8
Morrano and San Fernando	23 00	18 00	21.8	12 00	47.8
Morrano and Los Angeles	23 00	18 00	21.8	12 00	47.8
Ripon and Sumner	14 70			12 00	18.4
Ripon and Caliente	16 25			12 00	26.1
Ripon and Keene	17 20			12 00	30.2
Ripon and Tehachapi	18 00			12 00	33.3
Ripon and Mojave	19 40	18 00	7.2	12 00	38.1
Ripon and Ravenna	22 85	18 00	21.2	12 00	47.5
Ripon and Tunnel	23 00	18 00	21.8	12 00	47.8
Ripon and San Fernando	23 00	18 00	21.8	12 00	47.8
Ripon and Los Angeles	23 00	18 00	21.8	12 00	47.8
Salida and Sumner	14 50			12 00	17.2
Salida and Caliente	16 05			12 00	25.2
Salida and Keene	17 00			12 00	29.4
Salida and Tehachapi	17 80			12 00	32.6
Salida and Mojave	19 20	18 00	6.2	12 00	37.5
Salida and Ravenna	22 65	18 00	20.5	18 00	47.0
Salida and Tunnel	23 00	18 00	21.8	12 00	47.8
Salida and Newhall	23 00	18 00	21.8	12 00	47.8
Salida and San Fernando	23 00	18 00	21.8	12 00	47.8
Salida and Los Angeles	23 00	18 00	21.8	12 00	47.8
Modesto and Sumner	14 00			12 00	14.3
Modesto and Caliente	15 55			12 00	22.8
Modesto and Keene	16 50			12 00	27.3
Modesto and Tehachapi	17 30			12 00	30.6
Modesto and Mojave	18 70	18 00		12 00	35.8
Modesto and Ravenna	22 15	18 00	18.7	12 00	45.8
Modesto and Newhall	23 00	18 00	21.8	12 00	47.8
Modesto and Tunnel	23 00	18 00	21.8	12 00	47.8
Modesto and San Fernando	23 00	18 00	21.8	12 00	47.8
Modesto and Los Angeles	23 00	18 00	21.8	12 00	47.8
Turlock and Sumner	13 10			12 00	8.4
Turlock and Caliente	14 65			12 00	18.1
Turlock and Keene	15 60			12 00	23.1

*In effect January 1, 1880.

APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Turlock and Tehachapi*	$16 40			$12 00	26.8
Turlock and Mojave	17 80			12 00	32.6
Turlock and Ravenna	21 25	$18 00	15.3	12 00	43.5
Turlock and Newhall	22 80	18 00	21.0	12 00	47.4
Turlock and Tunnel	23 00	18 00	21.8	12 00	47.8
Turlock and San Fernando	23 00	18 00	21.8	12 00	47.8
Turlock and Los Angeles	23 00	18 00	21.8	12 00	47.8
Merced and Caliente	12 95			12 00	7.3
Merced and Keene	13 90			12 00	13.6
Merced and Tehachapi	14 70			12 00	18.4
Merced and Mojave	16 10			12 00	25.4
Merced and Ravenna	19 55	18 00	7.9	12 00	38.6
Merced and Newhall	21 10	18 00	14.7	12 00	43.1
Merced and Tunnel	21 35	18 00	15.7	12 00	43.8
Merced and San Fernando	21 70	18 00	17.0	12 00	44.7
Merced and Los Angeles	22 95	18 00	21.6	12 00	47.7
Athlone and Keene	13 20			12 00	9.1
Athlone and Tehachapi	14 00			12 00	14.3
Athlone and Mojave	15 40			12 00	22.0
Athlone and Ravenna	18 85	18 00		12 00	36.3
Athlone and Newhall	20 40	18 00	11.7	12 00	41.2
Athlone and Tunnel	20 65	18 00	12.8	12 00	41.9
Athlone and San Fernando	21 00	18 00	14.3	12 00	42.8
Athlone and Los Angeles	22 25	18 00	19.1	12 00	46.1
Minturn and Keene	12 75			12 00	5.9
Minturn and Tehachapi	13 55			12 00	11.4
Minturn and Mojave	14 95			12 00	19.7
Minturn and Ravenna	18 40			12 00	34.8
Minturn and Newhall	19 95	18 00	9.7	12 00	39.8
Minturn and Tunnel	20 20	18 00	10.9	12 00	40.6
Minturn and San Fernando	20 55	18 00	12.4	12 00	41.6
Minturn and Los Angeles	21 80	18 00	17.4	12 00	44.9
Berenda and Tehachapi	12 90			12 00	6.9
Berenda and Mojave	14 30			12 00	16.1
Berenda and Ravenna	17 75			12 00	32.4
Berenda and Newhall	19 30	18 00	6.7	12 00	37.8
Berenda and Tunnel	19 55	18 00	7.9	12 00	38.6
Berenda and San Fernando	19 90	18 00	9.5	12 00	39.7
Berenda and Los Angeles	21 15	18 00	14.9	12 00	43.2
Madera and Mojave	13 80			12 00	13.0
Madera and Ravenna	17 25			12 00	30.4
Madera and Newhall	18 80	18 00	4.3	12 00	36.2
Madera and Tunnel	19 05	18 00	5.5	12 00	37.0
Madera and San Fernando	19 40	18 00	7.2	12 00	38.1
Madera and Los Angeles	20 90	18 00	13.9	12 00	42.6
Borden and Mojave	13 60			12 00	11.8
Borden and Ravenna	17 05			12 00	29.6
Borden and Newhall	18 60	18 00		12 00	35.5
Borden and Tunnel	18 85	18 00	4.5	12 00	36.3
Borden and San Fernando	19 20	18 00	6.2	12 00	37.5
Borden and Los Angeles	20 45	18 00	11.9	12 00	41.3
Sycamore and Mojave	12 95			12 00	7.3
Sycamore and Ravenna	16 40			12 00	26.8
Sycamore and Newhall	17 95			12 00	33.1
Sycamore and Tunnel	18 20	18 00		12 00	34.1
Sycamore and San Fernando	18 55	18 00		12 00	35.3
Sycamore and Los Angeles	19 80	18 00	9.1	12 00	39.4
Fresno and Mojave					
Fresno and Newhall	17 25			12 00	30.4
Fresno and Tunnel	17 50			12 00	31.4
Fresno and San Fernando	17 85			12 00	32.7
Fresno and Los Angeles	19 10	18 00	5.7	12 00	37.2
Fresno and Ravenna	15 70			12 00	23.7

*In effect January 1, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Kingsburg and Ravenna*	$14 30			$12 00	16.1
Kingsburg and Newhall	15 86			12 00	24.3
Kingsburg and Tunnel	16 10			12 00	25.5
Kingsburg and San Fernando	16 45			12 00	27.1
Kingsburg and Los Angeles	17 70			12 00	32.2
Cross Creek and Ravenna	13 75			12 00	12.7
Cross Creek and Newhall	15 30			12 00	21.6
Cross Creek and Tunnel	15 55			12 00	22.5
Cross Creek and San Fernando	15 90			12 00	24.8
Cross Creek and Los Angeles	17 15			12 00	30.0
Goshen and Ravenna	13 35			12 00	10.1
Goshen and Newhall	14 90			12 00	19.4
Goshen and Tunnel	15 15			12 00	20.8
Goshen and San Fernando	15 50			12 00	22.6
Goshen and Los Angeles	16 75			12 00	28.3
Hanford and Ravenna	14 25			12 00	15.8
Hanford and Newhall	15 80			12 00	24.0
Hanford and Tunnel	16 05			12 00	25.2
Hanford and San Fernando	16 40			12 00	26.8
Hanford and Los Angeles	17 65			12 00	32.0
Lemoore and Ravenna	14 80			12 00	18.9
Lemoore and Newhall	16 35			12 00	26.6
Lemoore and Tunnel	16 60			12 00	27.7
Lemoore and San Fernando	16 95			12 00	29.2
Lemoore and Los Angeles	18 20			12 00	34.1
Tulare and Newhall	14 15			12 00	15.2
Tulare and Tunnel	14 40			12 00	16.7
Tulare and San Fernando	14 75			12 00	18.6
Tulare and Los Angeles	16 00			12 00	25.0
Delano and San Fernando	12 60			12 00	4.8
Delano and Los Angeles	13 85			12 00	13.4
Downey and Delano	14 35			12 50	12.9
Downey and Tulare	16 50			12 50	24.2
Downey and Tagus	16 85			12 50	25.8
Downey aud Lemoore	18 70			12 50	33.2
Downey and Hanford	18 15			12 50	31.1
Downey and Goshen	17 25			12 50	27.5
Downey and Cross Creek	17 65			12 50	29.2
Downey and Kingsburg	18 20			12 50	31.3
Downey and Fresno	19 60	$18 50	5.6	12 50	36.2
Downey and Sycamore	20 30	18 50	8.9	12 50	38.4
Downey and Borden	20 95	18 50	11.2	12 50	40.3
Downey and Madera	21 15	18 50	12.5	12 50	40.9
Downey and Berenda	21 65	18 50	14.6	12 50	42.2
Downey and Minturn	22 30	18 50	17.0	12 50	43.9
Downey and Athlone	22 75	18 50	18.7	12 50	45.0
Downey and Merced	23 45	18 50	21.1	12 50	46.7
Downey and Turlock	23 50	18 50	21.3	12 50	46.8
Downey and Ceres	23 50	18 50	21.3	12 50	46.8
Downey and Modesto	23 50	18 50	21.3	12 50	46.8
Downey and Salida	23 50	18 50	21.3	12 50	46.8
Downey and Ripon	23 50	18 50	21.3	12 50	46.8
Downey and Morrano	23 50	18 50	21.3	12 50	46.8
Downey and Lathrop	23 50	18 50	21.3	12 50	46.8
Downey and Stockton	23 50	18 50	21.3	12 50	46.8
Downey and Lodi	23 50	18 50	21.3	12 50	46.8
Downey and Acampo	23 50	18 50	21.3	12 50	46.8
Downey and Galt	23 50	18 50	21.3	12 50	46.8
Downey and Elk Grove	23 50	18 50	21.3	12 50	46.8
Downey and Florin	23 50	18 50	21.3	12 50	46.8
Downey and Brighton	23 50	18 50	21.3	12 50	46.8
Downey and Sacramento	23 50	18 50	21.3	12 50	46.8
Downey and Banta	23 50	18 50	21.3	12 50	46.8
Downey and Tracy	23 50	18 50	21.3	12 50	46.8
Downey and Ellis	23 50	18 50	21.3	12 50	46.8

* In effect January 1, 1880.

APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Downey and Livermore*	$23 50	$18 50	21.3	$12 50	46.8
Downey and Pleasanton	23 50	18 50	21.3	12 50	46.8
Downey and Suñol	23 50	18 50	21.3	12 50	46.8
Downey and Miles	23 50	18 50	21.3	12 50	46.8
Downey and Washington	23 50	18 50	21.3	12 50	46.8
Downey and Milpitas	23 50	18 50	21.3	12 50	46.8
Downey and San José	23 50	18 50	21.3	12 50	46.8
Downey and Decoto	23 50	18 50	21.3	12 50	46.8
Downey and Haywards	23 50	18 50	21.3	12 50	46.8
Downey and Lorenzo	23 50	18 50	21.3	12 50	46.8
Downey and San Leandro	23 50	18 50	21.3	12 50	46.8
Downey and Melrose	23 50	18 50	21.3	12 50	46.8
Downey and Bethany	23 50	18 50	21.3	12 50	46.8
Downey and Brentwood	23 50	18 50	21.3	12 50	46.8
Downey and Antioch	23 50	18 50	21.3	12 50	46.8
Downey and Cornwall	23 50	18 50	21.3	12 50	46.8
Downey and Bay Point	23 50	18 50	21.3	12 50	46.8
Downey and Avon	23 50	18 50	21.3	12 50	46.8
Downey and Martinez	23 50	18 50	21.3	12 50	46.8
Downey and Port Costa	23 50	18 50	21.3	12 50	46.8
Downey and Vallejo Junction	23 50	18 50	21.3	12 50	46.8
Downey and Pinole	23 50	18 50	21.3	12 50	46.8
Downey and San Pablo	23 50	18 50	21.3	12 50	46.8
Downey and Oakland	23 50	18 50	21.3	12 50	46.8
Downey and San Francisco	23 50	18 50	21.3	12 50	46.8
Anaheim and Delano	15 35			13 50	12.0
Anaheim and Tulare	17 50			13 50	22.9
Anaheim and Tagus	17 85			13 50	24.4
Anaheim and Hanford	19 15			13 50	29.5
Anaheim and Lemoore	19 70			13 50	31.5
Anaheim and Goshen	18 25			13 50	26.0
Anaheim and Cross Creek	18 65			13 50	27.6
Anaheim and Kingsburg	19 20			13 50	29.7
Anaheim and Fresno	20 60	19 50	5.3	13 50	34.5
Anaheim and Sycamore	21 30	19 50	8.5	13 50	36.6
Anaheim and Borden	21 95	19 50	11.2	13 50	38.5
Anaheim and Madera	22 15	19 50	12.0	13 50	39.0
Anaheim and Berenda	22 65	19 50	13.9	13 50	40.4
Anaheim and Minturn	23 30	19 50	16.3	13 50	42.1
Anaheim and Athlone	23 75	19 50	17.9	13 50	43.2
Anaheim and Merced	24 45	19 50	20.2	13 50	44.8
Anaheim and Turlock	24 50	19 50	20.4	13 50	45.0
Anaheim and Ceres	24 50	19 50	20.4	13 50	45.0
Anaheim and Modesto	24 50	19 50	20.4	13 50	45.0
Anaheim and Salida	24 50	19 50	20.4	13 50	45.0
Anaheim and Ripon	24 50	19 50	20.4	13 50	45.0
Anaheim and Morrano	24 50	19 50	20.4	13 50	45.0
Anaheim and Lathrop	24 50	19 50	20.4	13 50	45.0
Anaheim and Stockton	24 50	19 50	20.4	13 50	45.0
Anaheim and Lodi	24 50	19 50	20.4	13 50	45.0
Anaheim and Acampo	24 50	19 50	20.4	13 50	45.0
Anaheim and Galt	24 50	19 50	20.4	13 50	45.0
Anaheim and Elk Grove	24 50	19 50	20.4	13 50	45.0
Anaheim and Florin	24 50	19 50	20.4	13 50	45.0
Anaheim and Brighton	24 50	19 50	20.4	13 50	45.0
Anaheim and Sacramento	24 50	19 50	20.4	13 50	45.0
Anaheim and Banta	24 50	19 50	20.4	13 50	45.0
Anaheim and Tracy	24 50	19 50	20.4	13 50	45.0
Anaheim and Ellis	24 50	19 50	20.4	13 50	45.0
Anaheim and Livermore	24 50	19 50	20.4	13 50	45.0
Anaheim and Pleasanton	24 50	19 50	20.4	13 50	45.0
Anaheim and Suñol	24 50	19 50	20.4	13 50	45,0
Anaheim and Niles	24 50	19 50	20.4	13 50	45.0
Anaheim and Washington	24 50	19 50	20.4	13 50	45.0
Anaheim and Milpitas	24 50	19 50	20.4	13 50	45.0

*In effect January 1, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Anaheim and San José*	$24 50	$19 50	20.4	$13 50	45.0
Anaheim and Delano	24 50	19 50	20.4	13 50	45.0
Anaheim and Haywards	24 50	19 50	20.4	13 50	45.0
Anaheim and Lorenzo	24 50	19 50	20.4	13 50	45.0
Anaheim and San Leandro	24 50	19 50	20.4	13 50	45.0
Anaheim and Melrose	24 50	19 50	20.4	13 50	45.0
Anaheim and Bethany	24 50	19 50	20.4	13 50	45.0
Anaheim and Brentwood	24 50	19 50	20.4	13 50	45.0
Anaheim and Byron	24 50	19 50	20.4	13 50	45.0
Anaheim and Antioch	24 50	19 50	20.4	13 50	45.0
Anaheim and Cornwall	24 50	19 50	20.4	13 50	45.0
Anaheim and Bay Point	24 50	19 50	20.4	13 50	45.0
Anaheim and Avon	24 50	19 50	20.4	13 50	45.0
Anaheim and Martinez	24 50	19 50	20.4	13 50	45.0
Anaheim and Port Costa	24 50	19 50	20.4	13 50	45.0
Anaheim and Vallejo Junction	24 50	19 50	20.4	13 50	45.0
Anaheim and Pinole	24 50	19 50	20.4	13 50	45.0
Anaheim and San Pablo	24 50	19 50	20.4	13 50	45.0
Anaheim and Oakland	24 50	19 50	20.4	13 50	45.0
Anaheim and San Francisco	24 50	19 50	20.4	13 50	45.0
Santa Ana and Delano	15 85			14 00	11.7
Santa Ana and Tulare	18 00			14 00	22.2
Santa Ana and Tagus	18 35			14 00	23.7
Santa Ana and Hanford	19 65			14 00	28.8
Santa Ana and Lemoore	20 20			14 00	30.7
Santa Ana and Goshen	18 75			14 00	25.3
Santa Ana and Cross Creek	19 15			14 00	26.9
Santa Ana and Kingsburg	19 70			14 00	28.9
Santa Ana and Fresno	21 10	20 00	5.2	14 00	33.6
Santa Ana and Sycamore	21 80	20 00	8.3	14 00	35.8
Santa Ana and Borden	22 45	20 00	10.9	14 00	37.6
Santa Ana and Madera	22 65	20 00	11.7	14 00	38.2
Santa Ana and Berenda	23 15	20 00	13.6	14 00	39.5
Santa Ana and Minturn	23 80	20 00	16.0	14 00	41.2
Santa Ana and Athlone	24 25	20 00	17.5	14 00	42.3
Santa Ana and Merced	24 95	20 00	19.8	14 00	43.9
Santa Ana and Turlock	25 00	20 00	20.0	14 00	44.0
Santa Ana and Ceres	25 00	20 00	20.0	14 00	44.0
Santa Ana and Modesto	25 00	20 00	20.0	14 00	44.0
Santa Ana and Salida	25 00	20 00	20.0	14 00	44.0
Santa Ana and Ripon	25 00	20 00	20.0	14 00	44.0
Santa Ana and Morrano	25 00	20 00	20.0	14 00	44.0
Santa Ana and Lathrop	25 00	20 00	20.0	14 00	44.0
Santa Ana and Stockton	25 00	20 00	20.0	14 00	44.0
Santa Ana and Lodi	25 00	20 00	20.0	14 00	44.0
Santa Ana and Acampo	25 00	20 00	20.0	14 00	44.0
Santa Ana and Galt	25 00	20 00	20.0	14 00	44.0
Santa Ana and Elk Grove	25 00	20 00	20.0	14 00	44.0
Santa Ana and Florin	25 00	20 00	20.0	14 00	44.0
Santa Ana and Brighton	25 00	20 00	20.0	14 00	44.0
Santa Ana and Sacramento	25 00	20 00	20.0	14 00	44.0
Santa Ana and Banta	25 00	20 00	20.0	14 00	44.0
Santa Ana and Tracy	25 00	20 00	20.0	14 00	44.0
Santa Ana and Ellis	25 00	20 00	20.0	14 00	44.0
Santa Ana and Livermore	25 00	20 00	20.0	14 00	44.0
Santa Ana and Pleasanton	25 00	20 00	20.0	14 00	44.0
Santa Ana and Suñol	25 00	20 00	20.0	14 00	44.0
Santa Ana and Niles	25 00	20 00	20.0	14 00	44.0
Santa Ana and Washington	25 00	20 00	20.0	14 00	44.0
Santa Ana and Milpitas	25 00	20 00	20.0	14 00	44.0
Santa Ana and San José	25 00	20 00	20.0	14 00	44.0
Santa Ana and Decoto	25 00	20 00	20.0	14 00	44.0
Santa Ana and Haywards	25 00	20 00	20.0	13 00	44.0
Santa Ana and Lorenzo	25 00	20 00	20.0	14 00	44.0
Santa Ana and San Leandro	25 00	20 00	20.0	14 00	44.0

*In effect January 1, 1880.

APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Santa Ana and Melrose*	$25 00	$20 00	20.0	$14 00	44.0
Santa Ana and Bethany	25 00	20 00	20.0	14 00	44.0
Santa Ana and Brentwood	25 00	20 00	20.0	14 00	44.0
Santa Ana and Byron	25 00	20 00	20.0	14 00	44.0
Santa Ana and Antioch	25 00	20 00	20.0	14 00	44.0
Santa Ana and Cornwall	25 00	20 00	20.0	14 00	44.0
Santa Ana and Bay Point	25 00	20 00	20.0	14 00	44.0
Santa Ana and Avon	25 00	20 00	20.0	14 00	44.0
Santa Ana and Martinez	25 00	20 00	20.0	14 00	44.0
Santa Ana and Port Costa	25 00	20 00	20.0	14 00	44.0
Santa Ana and Vallejo Junction	25 00	20 00	20.0	14 00	44.0
Santa Ana and Pinole	25 00	20 00	20.0	14 00	44.0
Santa Ana and San Pablo	25 00	20 00	20.0	14 00	44.0
Santa Ana and Oakland	25 00	20 00	20.0	14 00	44.0
Santa Ana and San Francisco	25 00	20 00	20.0	14 00	44.0
Savanna and Delano	14 60			12 75	12.7
Savanna and Tulare	16 75			12 75	23.9
Savanna and Tagus	17 10			12 75	25.4
Savanna and Hanford	18 40			12 75	30.7
Savanna and Lemoore	18 95			12 75	32.7
Savanna and Goshen	17 50			12 75	27.4
Savanna and Cross Creek	17 90			12 75	28.7
Savanna and Kingsburg	18 45			12 75	30.9
Savanna and Fresno	19 85	18 75	5.5	12 75	35.8
Savanna and Sycamore	20 55	18 75	8.8	12 75	38.0
Savanna and Borden	21 20	18 75	11.6	12 75	39.9
Savanna and Madera	21 40	18 75	12.4	12 75	40.4
Savanna and Berenda	21 90	18 75	14.4	12 75	41.8
Savanna and Minturn	22 55	18 75	16.9	12 75	43.5
Savanna and Athlone	23 00	18 75	18.5	12 75	44.6
Savanna and Merced	23 70	18 75	20.9	12 75	46.2
Savanna and Turlock	23 75	18 75	21.1	12 75	46.3
Savanna and Ceres	23 75	18 75	21.1	12 75	46.3
Savanna and Modesto	23 75	18 75	21.1	12 75	46.3
Savanna and Salida	23 75	18 75	21.1	12 75	46.3
Savanna and Ripon	23 75	18 75	21.1	12 75	46.3
Savanna and Morrano	23 75	18 75	21.1	12 75	46.3
Savanna and Lathrop	23 75	18 75	21.1	12 75	46.3
Savanna and Stockton	23 75	18 75	21.1	12 75	46.3
Savanna and Lodi	23 75	18 75	21.1	12 75	46.3
Savanna and Acampo	23 75	18 75	21.1	12 75	46.3
Savanna and Galt	23 75	18 75	21.1	12 75	46.3
Savanna and Elk Grove	23 75	18 75	21.1	12 75	46.3
Savanna and Florin	23 75	18 75	21.1	12 75	46.3
Savanna and Brighton	23 75	18 75	21.1	12 75	46.3
Savanna and Banta	23 75	18 75	21.1	12 75	46.3
Savanna and Tracy	23 75	18 75	21.1	12 75	46.3
Savanna and Ellis	23 75	18 75	21.1	12 75	46.3
Savanna and Livermore	23 75	18 75	21.1	12 75	46.3
Savanna and Pleasanton	23 75	18 75	21.1	12 75	46.3
Savanna and Suñol	23 75	18 75	21.1	12 75	46.3
Savanna and Niles	23 75	18 75	21.1	12 75	46.3
Savanna and Washington	23 75	18 75	21.1	12 75	46.3
Savanna and Milpitas	23 75	18 75	21.1	12 75	46.3
Savanna and San José	23 75	18 75	21.1	12 75	46.3
Savanna and Decoto	23 75	18 75	21.1	12 75	46.3
Savanna and Haywards	23 75	18 75	21.1	12 75	46.3
Savanna and Lorenzo	23 75	18 75	21.1	12 75	46.3
Savanna and San Leandro	23 75	18 75	21.1	12 75	46.3
Savanna and Melrose	23 75	18 75	21.1	12 75	46.3
Savanna and Bethany	23 75	18 75	21.1	12 75	46.3
Savanna and Brentwood	23 75	18 75	21.1	12 75	46.3
Savanna and Byron	23 75	18 75	21.1	12 75	46.3
Savanna and Antioch	23 75	18 75	21.1	12 75	46.3
Savanna and Cornwall	23 75	18 75	21.1	12 75	46.3

*In effect January 1, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Savanna and Bay Point*	$23 75	$18 75	21.1	$12 75	46.3
Savanna and Avon	23 75	18 75	21.1	12 75	46.3
Savanna and Martinez	23 75	18 75	21.1	12 75	46.3
Savanna and Port Costa	23 75	18 75	21.1	12 75	46.3
Savanna and Vallejo Junction	23 75	18 75	21.1	12 75	46.3
Savanna and Pinole	23 75	18 75	21.1	12 75	46.3
Savanna and San Pablo	23 75	18 75	21.1	12 75	46.3
Savanna and Oakland	23 75	18 75	21.1	12 75	46.3
Savanna and San Francisco	23 75	18 75	21.1	12 75	46.3
Monte and Delano	14 60	----------	----------	12 75	46.3
Monte and Tulare	16 75	----------	----------	12 75	12.7
Monte and Tagus	17 10	----------	----------	12 75	23.9
Monte and Hanford	18 49	----------	----------	12 75	25.4
Monte and Lemoore	18 95	----------	----------	12 75	30.7
Monte and Goshen	17 50	----------	----------	12 75	32.7
Monte and Cross Creek	17 90	----------	----------	12 75	27.1
Monte and Kingsburg	18 45	----------	----------	12 75	28.7
Monte and Fresno	19 85	18 75	5.5	12 75	30.9
Monte and Sycamore	20 55	18 75	8.8	12 75	35.8
Monte and Borden	21 20	18 75	11.6	12 75	38.0
Monte and Madera	21 40	18 75	12.4	12 75	39.0
Monte and Berenda	21 90	18 75	14.4	12 75	40.4
Monte and Minturn	22 55	18 75	16.9	12 75	41.8
Monte and Athlone	23 00	18 75	18.5	12 75	43.5
Monte and Merced	23 70	18 75	20.9	12 75	44.6
Monte and Turlock	23 75	18 75	21.1	12 75	46.2
Monte and Ceres	23 75	18 75	21.1	12 75	46.3
Monte and Modesto	23 75	18 75	21.1	12 75	46.3
Monte and Salida	23 75	18 75	21.1	12 75	46.3
Monte and Ripon	23 75	18 75	21.1	12 75	46.3
Monte and Morrano	23 75	18 75	21.1	12 75	46.3
Monte and Lathrop	23 75	18 75	21.1	12 75	46.3
Monte and Stockton	23 75	18 75	21.1	12 75	46.3
Monte and Lodi	23 75	18 75	21.1	12 75	46.3
Monte and Acampo	23 75	18 75	21.1	12 75	46.3
Monte and Galt	23 75	18 75	21.1	12 75	46.3
Monte and Elk Grove	23 75	18 75	21.1	12 75	46.3
Monte and Florin	23 75	18 75	21.1	12 75	46.3
Monte and Brighton	23 75	18 75	21.1	12 75	46.3
Monte and Sacramento	23 75	18 75	21.1	12 75	46.3
Monte and Banta	23 75	18 75	21.1	12 75	46.3
Monte and Tracy	23 75	18 75	21.1	12 75	46.3
Monte and Ellis	23 75	18 75	21.1	12 75	46.3
Monte and Livermore	23 75	18 75	21.1	12 75	46.3
Monte and Pleasanton	23 75	18 75	21.1	12 75	46.3
Monte and Suñol	23 75	18 75	21.1	12 75	46.3
Monte and Niles	23 75	18 75	21.1	12 75	46.3
Monte and Washington	23 75	18 75	21.1	12 75	46.3
Monte and Milpitas	23 75	18 75	21.1	12 75	46.3
Monte and San José	23 75	18 75	21.1	12 75	46.3
Monte and Decoto	23 75	18 75	21.1	12 75	46.3
Monte and Haywards	23 74	18 75	21.1	12 75	46.3
Monte and Lorenzo	23 75	18 75	21.1	12 75	46.3
Monte and San Leandro	23 75	18 75	21.1	12 75	46.3
Monte and Melrose	23 75	18 75	21.1	12 75	46.3
Monte and Bethany	23 75	18 75	21.1	12 75	46.3
Monte and Brentwood	23 75	18 75	21.1	12 75	46.3
Monte and Byron	23 75	18 75	21.1	12 75	46.3
Monte and Antioch	23 75	18 75	21.1	12 75	46.3
Monte and Cornwall	23 75	18 75	21.1	12 75	46.3
Monte and Bay Point	23 75	18 75	21.1	12 75	46.3
Monte and Avon	23 75	18 75	21.1	12 75	46.3
Monte and Martinez	23 75	18 75	21.1	12 75	46.3
Monte and Port Costa	23 75	18 75	21.1	12 75	46.3
Monte and Vallejo Junction	23 75	18 75	21.1	12 75	46.3

*In effect January 1, 1880.

APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Monte and Pinole*	$23 75	$18 75	21.1	$12 75	46.3
Monte and San Pablo	23 73	18 75	21.1	12 75	46.3
Monte and Oakland	23 75	18 75	21.1	12 75	46.3
Monte and San Francisco	23 75	18 75	21.1	12 75	46.3
Pomona and Delano	15 60	----------	----------	13 75	11.9
Pomona and Tulare	17 75	----------	----------	13 75	22.5
Pomona and Tagus	18 10	----------	----------	13 75	24.6
Pomona and Hanford	19 40	----------	----------	13 75	29.1
Pomona and Lemoore	19 95	----------	----------	13 75	31.1
Pomona and Goshen	18 50	----------	----------	13 75	25.7
Pomona and Cross Creek	18 90	----------	----------	13 75	27.2
Pomona and Kingsburg	19 45	----------	----------	13 75	29.3
Pomona and Fresno	20 85	19 75	5.3	13 75	34.1
Pomona and Sycamore	21 55	19 75	8.4	13 75	36.2
Pomona and Borden	22 20	19 75	11.0	13 75	38.1
Pomona and Madera	22 40	19 75	11.8	13 75	38.6
Pomona and Berenda	22 90	19 75	13.8	13 75	40.0
Pomona and Minturn	23 55	19 75	16.1	13 75	41.6
Pomona and Athlone	24 00	19 75	17.7	13 75	42.7
Pomona and Merced	24 70	19 75	20.0	13 75	44.3
Pomona and Turlock	24 75	19 75	20.2	13 75	44.4
Pomona and Ceres	24 75	19 75	20.2	13 75	44.4
Pomona and Modesto	24 75	19 75	20.2	13 75	44.4
Pomona and Salido	24 75	19 75	20.2	13 75	44.4
Pomona and Ripon	24 75	19 75	20.2	13 75	44.4
Pomona and Morrano	24 75	19 75	20.2	13 75	44.4
Pomona and Lathrop	24 75	19 75	20.2	13 75	44.4
Pomona and Stockton	24 75	19 75	20.2	13 75	44.4
Pomona and Lodi	24 75	19 75	20.2	13 75	44.4
Pomona and Acampo	24 75	19 75	20.2	13 75	44.4
Pomona and Galt	24 75	19 75	20.2	13 75	44.4
Pomona and Elk Grove	24 75	19 75	20.2	13 75	44.4
Pomona and Florin	24 75	19 75	20.2	13 75	44.4
Pomona and Brighton	24 75	19 75	20.2	13 75	44.4
Pomona and Sacramento	24 75	19 75	20.2	13 75	44.4
Pomona and Banta	24 75	19 75	20.2	13 75	44.4
Pomona and Tracy	24 75	19 75	20.2	13 75	44.4
Pomona and Ellis	24 75	19 75	20.2	13 75	44.4
Pomona and Livermore	24 75	19 75	20.2	13 75	44.4
Pomona and Fleasanton	24 75	19 75	20.2	13 75	44.4
Pomona and Suñol	24 75	19 75	20.2	13 75	44.4
Pomona and Niles	24 75	19 75	20.2	13 75	44.4
Pomona and Washington	24 75	19 75	20.2	13 75	44.4
Pomona and Milpitas	24 75	19 75	20.2	13 75	44.4
Pomona and San José	24 75	19 75	20.2	13 75	44.4
Pomona and Decoto	24 75	19 75	20.2	13 75	44.4
Pomona and Haywards	24 75	19 75	20.2	13 75	44.4
Pomona and Lorenzo	24 75	19 75	20.2	13 75	44.4
Pomona and San Leandro	24 75	19 75	20.2	13 75	44.4
Pomona and Melrose	24 75	19 75	20.2	13 75	44.4
Pomona and Bethany	24 75	19 75	20.2	13 75	44.4
Pomona and Brentwood	24 75	19 75	20.2	13 75	44.4
Pomona and Byron	24 75	19 75	20.2	13 75	44.4
Pomona and Antioch	24 75	19 75	20.2	13 75	44.4
Pomona and Cornwall	24 75	19 75	20.2	13 75	44.4
Pomona and Bay Point	24 75	19 75	20.2	13 75	44.4
Pomona and Avon	24 75	19 75	20.2	13 75	44.4
Pomona and Martinez	24 75	19 75	20.2	13 75	44.4
Pomona and Port Costa	24 75	19 75	20.2	13 75	44.4
Pomona and Vallejo Junction	24 75	19 75	20.2	13 75	44.4
Pomona and Pinole	24 75	19 75	20.2	13 75	44.4
Ponoma and San Pablo	24 75	19 75	20.2	13 75	44.4
Pomona and Oakland	24 75	19 75	20.2	13 75	44.4
Pomona and San Francisco	24 75	19 75	20.2	13 75	44.4
Colton and Delano	16 85	----------	----------	15 00	11.0

*In effect January 1, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Colton and Tulare*	$19 00			$15 00	21.0
Colton and Tagus	19 35			15 00	22.5
Colton and Hanford	20 65			15 00	27.4
Colton and Lemoore	21 20			15 00	29.2
Colton and Goshen	19 75			15 00	24.1
Colton and Cross Creek	20 15			15 00	25.6
Colton and Kingsburg	20 70			15 00	27.5
Colton and Fresno	22 10	$21 00	5.0	15 00	32.1
Colton and Sycamore	22 80	21 00	7.9	15 00	34.2
Colton and Borden	23 45	21 00	10.4	15 00	36.0
Colton and Madera	23 65	21 00	11.2	15 00	36.6
Colton and Berenda	24 15	21 00	13.0	15 00	37.9
Colton and Minturn	24 80	21 00	15.3	15 00	39.5
Colton and Athlone	25 25	21 00	16.8	15 00	40.6
Colton and Merced	25 95	21 00	19.1	15 00	42.2
Colton and Turlock	26 00	21 00	19.2	15 00	42.3
Colton and Ceres	26 00	21 00	19.2	15 00	42.3
Colton and Modesto	26 00	21 00	19.2	15 00	42.3
Colton and Salida	26 00	21 00	19.2	15 00	42.3
Colton and Ripon	26 00	21 00	19.2	15 00	42.3
Colton and Morrano	26 00	21 00	19.2	15 00*	42.3
Colton and Lathrop	26 09	21 00	19.2	15 00	42.3
Colton and Stockton	26 00	21 00	19.2	15 00	42.3
Colton and Lodi	26 00	21 00		15 00	42.3
Colton and Acampo	26 00	21 00	19.2	15 00	42.3
Colton and Galt	26 00	21 00	19.2	15 00	42.3
Colton and Elk Grove	26 00	21 00	19.2	15 00	42.3
Colton and Florin	26 00	21 00	19.2	15 00	42.3
Colton and Brighton	26 00	21 00	19.2	15 00	42.3
Colton and Sacramento	26 00	21 00	19.2	15 00	42.3
Colton and Bantas	26 00	21 00	19.2	15 00	42.3
Colton and Tracy	26 00	21 00	19.2	15 00	42.3
Colton and Ellis	26 00	21 00	19.2	15 00	42.3
Colton and Livermore	26 00	21 00	19.2	15 00	42.3
Colton and Pleasanton	26 00	21 00	19.2	15 00	42.3
Colton and Suñol	26 00	21 00	19.2	15 00	42.3
Colton and Niles	26 00	21 00	19.2	15 00	42.3
Colton and Washington	26 00	21 00	19.2	15 00	42.3
Colton and Milpitas	26 00	21 00	19.2	15 00	42.3
Colton and San José	26 00	21 00	19.2	15 00	42.3
Colton and Decoto	26 00	21 00	19.2	15 00	42.3
Colton and Haywards	26 00	21 00	19.2	15 00	42.3
Colton and Lorenzo	26 00	21 00	19.2	15 00	42.3
Colton and San Leandro	26 00	21 00	19.2	15 00	42.3
Colton and Melrose	26 00	21 00	19.2	15 00	42.3
Colton and Bethany	26 00	21 00	19.2	15 00	42.3
Colton and Brentwood	26 00	21 00	19.2	15 00	42.3
Colton and Byron	26 00	21 00	19.2	15 00	42.3
Colton and Antioch	26 00	21 00	19.2	15 00	42.3
Colton and Cornwall	26 00	21 00	19.2	15 00	42.3
Colton and Bay Point	26 00	21 00	19.2	15 00	42.3
Colton and Avon	26 00	21 00	19.2	15 00	42.3
Colton and Martinez	26 00	21 00	19.2	15 00	42.3
Colton and Port Costa	26 00	21 00	19.2	15 00	42.3
Colton and Vallejo Junction	26 00	21 00	19.2	15 00	42.3
Colton and Pinole	26 00	21 00	19.2	15 00	42.3
Colton and San Pablo	26 00	21 00	19.2	15 00	42.3
Colton and Oakland	26 00	21 00	19.2	15 00	42.3
Colton and San Francisco	26 00	21 00	19.2	15 00	42.3
Indio and Delano	23 85			22 00	7.8
Indio and Tulare	26 00			22 00	15.4
Indio and Tagus	26 35			22 00	16.5
Indio and Hanford	27 65			22 00	20.4
Indio and Lemoore	28 20			22 00	22.0
Indio and Goshen	26 75			22 00	17.8

*In effect January 1, 1880.

APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Indio and Cross Creek*	$27 15			$22 00	18.9
Indio and Kingsburg	27 70			22 00	20.6
Indio and Fresno	29 10			22 00	24.4
Indio and Sycamore	29 80			22 00	26.2
Indio and Borden	30 45			22 00	27.8
Indio and Madera	30 65			22 00	28.2
Indio and Berenda	31 15			22 00	29.4
Indio and Minturn	31 80			22 00	30.8
Indio and Athlone	32 25			22 00	31.8
Indio and Merced	32 95			22 00	33.2
Indio and Turlock	33 00			22 00	33.3
Indio and Ceres	33 00			22 00	33.3
Indio and Modesto	33 00			22 00	33.3
Indio and Salida	33 00			22 00	33.3
Indio and Ripon	33 00			22 00	33.3
Indio and Morrano	33 00			22 00	33.3
Indio and Lathrop	33 00			22 00	33.3
Indio and Stockton	33 00			22 00	33.3
Indio and Lodi	33 00			22 00	33.3
Indio and Acampo	33 00			22 00	33.3
Indio and Galt	33 00			22 00	33.3
Indio and Elk Grove	33 00			22 00	33.3
Indio and Florin	33 00			22 00	33.3
Indio and Brighton	33 00			22 00	33.3
Indio and Sacramento	33 00			22 00	33.3
Indio and Banta	33 00			22 00	33.3
Indio and Tracy	33 00			22 00	33.3
Indio and Ellis	33 00			22 00	33.3
Indio and Livermore	33 00			22 00	33.3
Indio and Pleasanton	33 00			22 00	33.3
Indio and Suñol	33 00			22 00	33.3
Indio and Niles	33 00			22 00	33.3
Indio and Washington	33 00			22 00	33.3
Indio and Milpitas	33 00			22 00	33.3
Indio and San José	33 00			22 00	33.3
Indio and Decoto	33 00			22 00	33.3
Indio and Haywards	33 00			22 00	33.3
Indio and Lorenzo	33 00			22 00	33.3
Indio and San Leandro	33 00			22 00	33.3
Indio and Melrose	33 00			22 00	33.3
Indio and Bethany	33 00			22 00	33.3
Indio and Brentwood	33 00			22 00	33.3
Indio and Byron	33 00			22 00	33.3
Indio and Antioch	33 00			22 00	33.3
Indio and Cornwall	33 00			22 00	33.3
Indio and Bay Point	33 00			22 00	33.3
Indio and Avon	33 00			22 00	33.3
Indio and Martinez	33 00			22 00	33.3
Indio and Port Costa	33 00			22 00	33.3
Indio and Vallejo Junction	33 00			22 00	33.3
Indio and Pinole	33 00			22 00	33.3
Indio and San Pablo	33 00			22 00	33.3
Indio and Oakland	33 00			22 00	33.3
Indio and San Francisco	33 00			22 00	33.3
Pinole and Oakland†	80	$0 75			
Pinole and San Francisco	80	75	16.6		
Tormey and Highland	85	75	11.8		
Tormey and West Berkeley	90	75	16.6		
Tormey and Stock Yards	95	75	21.0		
Tormey and Oakland	95	75	21.0		
Tormey and San Francisco	1 00	75	25.0		
Vallejo Junction and Stege	85	75	11.8		
Vallejo Junction and Highland	1 00	75	25.0		

*In effect January 1, 1880. †In effect January 25, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Vallejo Junction and West Berkeley*	$1 00	$ 75	25.0		
Vallejo Junction and Stock Yards	1 00	75	25.0		
Vallejo Junction and Oakland	1 00	75	25.0		
Vallejo Junction and San Francisco	1 00	75	25.0		
Valona and Stege	85	75	11.8		
Valona and Highland	1 00	75	25.0		
Valona and West Berkeley	1 00	75	25.0		
Valona and Stock Yards	1 00	75	25.0		
Valona and Oakland	1 00	75	25.0		
Valona and San Francisco	1 00	75	25.0		
Port Costa and Barrett	85	75	11.8		
Port Costa and Stege	95	75	21.0		
Port Costa and Highland	1 00	75	25.0		
Port Costa and West Berkeley	1 00	75	25.0		
Port Costa and Stock Yards	1 00	75	25.0		
Port Costa and Oakland	1 00	75	25.0		
Port Costa and San Francisco	1 00	75	25.0		
Martinez and San Pablo	80	75			
Martinez and Barrett	90	75	16.6		
Martinez and Stege	1 00	75	25.0		
Martinez and Highland	1 00	75	25.0		
Martinez and West Berkeley	1 00	75	25.0		
Martinez and Stock Yards	1 00	75	25.0		
Avon and San Pablo	1 00	95			
Avon and Barrett	1 10	95	13.6		
Avon and Stege	1 20	95	20.8		
Avon and Highland	1 20	95	20.8		
Avon and West Berkeley	1 20	95	20.8		
Avon and Stock Yards	1 20	95	20.8		
Bay Point and Sobrante	1 10	1 00	9.0		
Bay Point and San Pablo	1 20	1 00	16.6		
Bay Point and Barrett	1 30	1 00	23.0		
Bay Point and Stege	1 40	1 00	28.6		
Bay Point and Highland	1 40	1 00	28.6		
Bay Point and West Berkeley	1 40	1 00	28.6		
Bay Point and Stock Yards	1 40	1 00	28.6		
Cornwall and Pinole	1 10	1 00	9.0		
Cornwall and Sobrante	1 25	1 00	20.0		
Cornwall and San Pablo	1 25	1 00	20.0		
Cornwall and Barrett	1 35	1 00	25.9		
Cornwall and Stege	1 40	1 00	28.6		
Cornwall and Highland	1 50	1 00	33.3		
Cornwall and West Berkeley	1 50	1 00	33.3		
Cornwall and Stock Yards	1 50	1 00	33.3		
Antioch and Tormey	1 15	1 00	13.0		
Antioch and Pinole	1 25	1 00	20.0		
Antioch and Sobrante	1 25	1 00	20.0		
Antioch and San Pablo	1 25	1 00	20.0		
Antioch and Barrett	1 35	1 00	25.9		
Antioch and Stege	1 40	1 00	28.6		
Antioch and Highland	1 50	1 00	33.3		
Antioch and West Berkeley	1 50	1 00	33.3		
Antioch and Stock Yards	1 50	1 00	33.3		
Brentwood and Tormey	1 60	1 45	9.4		
Brentwood and Pinole	1 70	1 45	14.7		
Brentwood and Sobrante	1 70	1 45	14.7		
Brentwood and San Pablo	1 70	1 45	14.7		
Brentwood and Barrett	1 80	1 45	19.4		
Brentwood and Stege	1 85	1 45	21.6		
Brentwood and Highland	1 95	1 45	25.6		
Brentwood and West Berkeley	1 95	1 45	25.6		
Brentwook and Stock Yards	1 95	1 45	25.6		
Brentwood and Oakland	1 95	1 45	25.6		
Brentwood and San Francisco	1 95	1 45	25.6		
Byron and Port Costa	1 65	1 50	10.0		

*In effect January 25, 1880.

APPENDIX VII—Continued.

Between—	Regular Rate.	Reduced, or Second Class.	Per Cent of Reduction.	Reduced, or Third Class.	Per Cent of Reduction.
Byron and Vallejo Junction*	$1 75	$1 50	14.3		
Byron and Tormey	1 90	1 50	21.0		
Byron and Pinole	2 00	1 50	25.0		
Byron and Sobrante	2 00	1 50	25.0		
Byron and San Pablo	2 00	1 50	25.0		
Byron and Barrett	2 10	1 50	28.6		
Byron and Stege	2 15	1 50	30.2		
Byron and Highland	2 25	1 50	33.3		
Byron and West Berkeley	2 25	1 50	33.3		
Byron and Stock Yards	2 25	1 50	33.3		
Byron and Oakland	2 25	1 50	33.3		
Byron and San Francisco	2 25	1 50	33.3		
Bethany and Bay Point	1 85	1 50	19.0		
Bethany and Avon	1 95	1 50	23.1		
Bethany and Martinez	2 00	1 50	25.0		
Bethany and Port Costa	2 15	1 50	30.2		
Bethany and Vallejo Junction	2 25	1 50	33.3		
Bethany and Tormey	2 40	1 50	37.5		
Bethany and Pinole	2 50	1 50	40.0		
Bethany and Sobrante	2 50	1 50	40.0		
Bethany and San Pablo	2 50	1 50	40.0		
Bethany and Barrett	2 60	1 50	42.3		

*In effect January 25, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate Single Trip.	Reduced or Special First Class.	Per Cent of Reduction.	Reduced or Second Class.	Per Cent of Reduction.	Regular Rate Round Trip.	Reduced or Special Round Trip.	Per Cent of Reduction.
Bethany and Stege	$2 65			$1 50	43.4	$5 30	$5 00	5.7
Bethany and Highland	2 75			1 50	45.5	5 50	5 00	9.1
Bethany and West Berkeley	2 75			1 50	45.5	5 50	5 00	9.1
Bethany and Stock Yards	2 75			1 50	45.5	5 50	5 00	9.1
Bethany and Oakland	2 75			1 50	45.5	5 50	5 00	9.1
Bethany and San Francisco	2 75			1 50	45.5	5 50	5 00	9.1
Tracy and Antioch	1 65			1 50	10.0			
Tracy and Cornwall	1 90			1 50	21.0			
Tracy and Bay Point	2 25			1 50	33.3			
Tracy and Avon	2 35			1 50	36.2			
Tracy and Martinez	2 40			1 50	37.5			
Tracy and Port Costa	2 55			1 50	41.2	5 10	5 00	
Tracy and Vallejo Junction	2 65			1 50	43.4	5 30	5 00	5.7
Tracy and Tormey	2 80			1 50	46.4	5 60	5 00	10.7
Tracy and Pinole	2 90			1 50	48.3	5 80	5 00	13.8
Tracy and Sobrante	2 90			1 50	48.3	5 80	5 00	13.8
Tracy and San Pablo	2 90			1 50	48.3	5 80	5 00	13.8
Tracy and Barrett	3 00			1 50	50.0	6 00	5 00	16.7
Tracy and Stege	3 05	$3 00		1 50	50.8	6 10	5 00	18.0
Tracy and Highland	3 05	3 00		1 50	50.8	6 10	5 00	18.0
Tracy and West Berkeley	3 05	3 00		1 50	50.8	6 10	5 00	18.0
Tracy and Stock Yards	3 05	3 00		1 50	50.8	6 10	5 00	18.0
Tracy and Oakland	3 05	3 00		1 50	50.8	6 10	5 00	18.0
Tracy and San Francisco	3 15	3 00	5.0	1 50	52.4	6 30	5 00	20.6
Banta and Antioch	1 80			1 50	16.7			
Banta and Cornwall	2 05			1 50	26.8			
Banta and Bay Point	2 40			1 50	37.5			
Banta and Avon	2 50			1 50	40.0			
Banta and Martinez	2 55			1 50	41.2	5 10	5 00	
Banta and Port Costa	2 70			1 50	44.4	5 40	5 00	7.4
Banta and Vallejo Junction	2 80			1 50	46.4	5 60	5 00	10.7
Banta and Tormey	2 95			1 50	49.2	5 90	5 00	15.3
Banta and Pinole	3 05	3 00		1 50	50.8	6 10	5 00	18.0
Banta and Sobrante	3 05	3 00		1 50	50.8	6 10	5 00	18.0
Banta and San Pablo	3 05	3 00		1 50	50.8	6 10	5 00	18.0
Banta and Barrett	3 15	3 00	5.0	1 50	52.4	6 30	5 00	20.6
Banta and Stege	3 15	3 00	5.0	1 50	52.4	6 30	5 00	20.6
Banta and Highland	3 15	3 00	5.0	1 50	52.4	6 30	5 00	20.6
Banta and West Berkeley	3 15	3 00	5.0	1 50	52.4	6 30	5 00	20.6
Banta and Stock Yards	3 15	3 00	5.0	1 50	52.4	6 30	5 00	20.6
Banta and Oakland	3 15	3 00	5.0	1 50	52.4	6 30	5 00	20.6
Banta and San Francisco	3 25	3 00	8.0	1 50	53.8	6 50	5 00	23.1
San Joaquin Bridge and Brentwood	1 60			1 50	6.2			
San Joaquin Bridge and Antioch	2 05			1 50	26.8			
San Joaquin Bridge and Cornwall	2 30			1 50	34.8			
San Joaquin Bridge and Bay Point	2 65			1 50	43.4	5 30	5 00	5.7
San Joaquin Bridge and Avon	2 75			1 50	45.5	5 50	5 00	9.1
San Joaquin Bridge and Martinez	2 80			1 50	46.4	5 60	5 00	10.7
San Joaquin Bridge and Port Costa	2 95			1 50	49.2	5 90	5 00	15.3
San Joaquin Bridge and Vallejo Junction	3 05	3 00		1 50	50.8	6 10	5 00	18.0
San Joaquin Bridge and Tormey	3 20	3 00	6.3	1 50	53.1	6 40	5 00	21.9
San Joaquin Bridge and Pinole	3 30	3 00	9.1	1 50	54.5	6 60	5 00	24.2
San Joaquin Bridge and Sobrante	3 30	3 00	9.1	1 50	54.5	6 60	5 00	24.2
San Joaquin Bridge and San Pablo	3 30	3 00	9.1	1 50	54.5	6 60	5 00	24.2
San Joaquin Bridge and Barrett	3 40	3 00	11.8	1 50	55.9	6 80	5 00	26.5
San Joaquin Bridge and Stege	3 40	3 00	11.8	1 50	55.9	6 80	5 00	26.5
San Joaquin Bridge and Highland	3 40	3 00	11.8	1 50	55.9	6 80	5 00	26.5
San Joaquin Bridge and West Berkeley	3 40	3 00	11.8	1 50	55.9	6 80	5 00	26.5
San Joaquin Bridge and Stock Yards	3 40	3 00	11.8	1 50	55.9	6 80	5 00	26.5
San Joaquin Bridge and Oakland	3 40	3 00	11.8	1 50	55.9	6 80	5 00	26.5
San Joaquin Bridge and San Francisco	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Lathrop and Brentwood	1 85			1 50	19.0			
Lathrop and Antioch	2 30			1 50	34.8			
Lathrop and Cornwall	2 55			1 50	41.2	5 10	5 00	
Lathrop and Bay Point	2 90			1 50	48.3	5 80	5 00	13.8
Lathrop and Avon	3 00			1 50	50.0	6 00	5 00	16.7
Lathrop and Martinez	3 05	3 00		1 50	50.8	6 10	5 00	18.0
Lathrop and Port Costa	3 20	3 00	6.3	1 50	53.1	6 40	5 00	21.9
Lathrop and Vallejo Junction	3 30	3 00	9.1	1 50	54.5	6 60	5 00	24.2
Lathrop and Tormey	3 45	3 00	13.0	1 50	56.5	6 90	5 00	27.5
Lathrop and Pinole	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Lathrop and Sobrante	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Lathrop and San Pablo	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Lathrop and Barrett	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Lathrop and Stege	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Lathrop and Highland	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Lathrop and West Berkeley	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Lathrop and Stock Yards	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6

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APPENDIX VII—Continued.

Between—	Regular Rate Single Trip.	Reduced or Special First Class.	Per Cent of Reduction.	Reduced or Second Class.	Per Cent of Reduction.	Regular Rate Round Trip.	Reduced or Special Round Trip.	Per Cent of Reduction.
Stockton and Byron	$1 80			$1 50	16.7			
Stockton and Brentwood	2 10			1 50	28.6			
Stockton and Antioch	2 55			1 50	41.2	$5 10	$5 00	
Stockton and Cornwall	2 80			1 50	46.4	5 60	5 00	10.7
Stockton and Bay Point	3 15	$3 00	5.0	1 50	52.4	6 30	5 00	20.6
Stockton and Avon	3 25	3 00	8.0	1 50	53.8	6 50	5 00	23.1
Stockton and Martinez	3 30	3 00	9.1	1 50	54.5	6 60	5 00	24.2
Stockton and Port Costa	3 45	3 00	13.0	1 50	56.5	6 90	5 00	27.5
Stockton and Vallejo Junction	3 50	3 00	14.3	1 60	57.1	7 00	5 00	28.6
Stockton and Tormey	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Stockton and Pinole	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Stockton and Sobrante	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Stockton and San Pablo	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Stockton and Barrett	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Stockton and Stege	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Stockton and Highland	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Stockton and West Berkeley	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Stockton and Stock Yards	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Castle and Byron	3 50	3 00	14.3	1 50	57.1	7 00	5 00	28.6
Castle and Brentwood	2 30			2 00	13.0			
Castle and Antioch	2 60			2 00	23.0			
Castle and Cornwall	3 05			2 00	34.4	6 10	6 00	
Castle and Bay Point	3 30			2 00	39.4	6 60	6 00	9.1
Castle and Avon	6 65	3 50		2 00	45.2	7 30	6 00	17.8
Castle and Martinez	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and Port Costa	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and Vallejo Junction	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and Tormey	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and Pinole	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and Sobrante	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and San Pablo	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and Barrett	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and Stege	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and Highland	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and West Berkeley	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0

Castle and Stock Yards	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and Oakland	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Castle and San Francisco	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Lodi and Byron	2 55			2 25	11.8			
Lodi and Brentwood	2 85			2 25	21.1			
Lodi and Antioch	3 30			2 25	31.8	6 60	6 00	9.1
Lodi and Cornwall	3 55			2 25	36.6	7 10	6 00	15.5
Lodi and Bay Point	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Avon	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Martinez	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Port Costa	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Vallejo Junction	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Tormey	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Pinole	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Sobrante	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and San Pablo	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Barrett	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Stege	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Highland	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and West Berkeley	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Stock Yards	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and Oakland	3 75			2 25	40.0	7 50	6 00	20.0
Lodi and San Francisco	3 75			2 25	40.0	7 50	6 00	20.0
Acampo and Byron	2 80			2 50	10.7			
Acampo and Brentwood	3 10			2 50	19.4	6 20	6 00	
Acampo and Antioch	3 55			2 50	29.6	7 10	6 00	15.5
Acampo and Cornwall	3 80			2 50	34.2	7 60	6 00	21.0
Acampo and Bay Point	4 00			2 50	37.5	8 00	6 00	25.0
Acampo and Avon	4 00			2 50	37.5	8 00	6 00	25.0
Acampo and Martinez	4 00			2 50	37.5	8 00	6 00	25.0
Acampo and Port Costa	4 00			2 50	37.5	8 00	6 00	25.0
Acampo and Vallejo Junction	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and Tormey	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and Pinole	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and Sobrante	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and San Pablo	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and Barrett	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and Stege	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and Highland	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and West Berkeley	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and Stock Yards	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and Oakland	4 00	2 50	37.5			8 00	6 00	25.0
Acampo and San Francisco	4 00	2 50	37.5			8 00	6 00	25.0

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APPENDIX VII—Continued.

Between—	Regular Rate Single Trip.	Reduced or Special First Class.	Per Cent of Reduction.	Reduced or Second Class.	Per Cent of Reduction.	Regular Rate Round Trip.	Reduced or Special Round Trip.	Per Cent of Reduction.
Galt and Byron	$2 80	$2 50	10.7					
Galt and Brentwood	3 10	2 50	19.4					
Galt and Antioch	3 55	2 50	29.6			$6 20	$6 00	15.5
Galt and Cornwall	3 80	2 50	34.2			7 10	6 00	21.0
Galt and Bay Point	4 00	2 50	37.5			7 60	6 00	25.0
Galt and Avon	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Martinez	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Port Costa	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Vallejo Junction	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Tormey	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Pinole	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Sobrante	4 00	2 50	37.5			8 00	6 00	25.0
Galt and San Pablo	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Barrett	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Stege	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Highland	4 00	2 50	37.5			8 00	6 00	25.0
Galt and West Berkeley	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Stock Yards	4 00	2 50	37.5			8 00	6 00	25.0
Galt and Oakland	4 00	2 50	37.5			8 00	6 00	25.0
Galt and San Francisco	4 00	2 50	37.5			8 00	6 00	25.0
Vallejo and San Pablo	80			$0 75		8 00	6 00	25.0
Vallejo and Barrett	90			75	16.6			
Vallejo and Oakland	1 00			75	25.0			
Vallejo and San Francisco	1 00			75	25.0			
Benicia and San Pablo	80			75				
Benicia and Barrett	90			75	16.6			
Benicia and Oakland	1 00			75	25.0			
Benicia and San Francisco	1 00			75	25.0			
Goodyears and San Pablo	1 30			1 25				
Goodyears and Barrett	1 40			1 25	10.7			
Goodyears and Oakland	1 40			1 25	16.7			
Goodyears and San Francisco	1 40			1 25	16.7			
Teal and Sobrante	1 60			1 50	6.2			
Teal and San Pablo	1 70			1 50	11.8			
Teal and Barrett	1 80			1 50	16.7			

Teal and Oakland	1 90			1 50	21.0			
Teal and San Francisco	1 90			1 50	21.0			
Suisun and Tormey	1 65			1 50	10.0			
Suisun and Pinole	1 75			1 50	14.3			
Suisun and Sobrante	2 00			1 50	25.0			
Suisun and San Pablo	2 05			1 50	26.8			
Suisun and Barrett	2 15			1 50	30.2			
Suisun and Oakland	2 25			1 50	33.3			
Connor and Port Costa	1 65			1 50	10.0			
Connor and Vallejo Junction	1 75			1 50	14.3			
Connor and Tormey	1 90			1 50	21.0			
Connor and Pinole	2 00			1 50	25.0			
Connor and Sobrante	2 25			1 50	33.3			
Connor and San Pablo	2 30			1 50	34.8			
Connor and Barrett	2 40			1 50	37.5			
Connor and Oakland	2 50			1 50	40.0			
Connor and San Francisco	2 50			1 50	40.0			
Elmira and Benicia	2 00			1 50	25.0			
Elmira and Port Costa	2 15			1 50	30.2			
Elmira and Vallejo Junction	2 25			1 50	33.3			
Elmira and Tormey	2 00			1 50	37.5			
Elmira and Pinole	2 50			1 50	40.0			
Elmira and Sobrante	2 75			1 50	45.5	5 50	5 00	9.1
Elmira and San Pablo	2 75			1 50	45.5	5 50	5 00	9.1
Elmira and Barrett	2 75			1 50	45.5	5 50	5 00	9.1
Elmira and Oakland	2 75			1 50	45.5	5 50	5 00	9.1
Elmira and San Francisco	2 75			1 50	45.5	5 50	5 00	9.1
Batavia and Stock Yards	1 75			1 50	14.3			
Batavia and Benicia	2 25			1 50	33.3			
Batavia and Port Costa	2 40			1 50	37.5			
Batavia and Vallejo Junction	2 50			1 50	40.0			
Batavia and Tormey	2 65			1 50	43.4	5 30	5 00	5.7
Batavia and Pinole	2 75			1 50	45.5	5 50	5 00	9.1
Batavia and Sobrante	3 00			1 50	50.0	6 00	5 00	16.7
Batavia and San Pablo	3 00			1 50	50.0	6 00	5 00	16.7
Batavia and Barrett	3 00			1 50	50.0	6 00	5 00	16.7
Batavia and Oakland	3 00			1 50	50.0	6 00	5 00	16.7
Batavia and San Francisco	3 00			1 50	50.0	6 00		5.0
Dixon and Teal	1 60			1 50	25.0			
Dixon and Goodyears	2 00			1 50	40.0			
Dixon and Benicia	2 50			1 50	43.4	5 30	5 00	5.7
Dixon and Port Costa	2 65			1 50	45.5	5 50	5 00	9.1
Dixon and Vallejo Junction	2 75							

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APPENDIX VII—Continued.

Between—	Regular Rate Single Trip.	Reduced or Special First Class.	Per Cent of Reduction.	Reduced or Second Class.	Per Cent of Reduction.	Regular Rate Round Trip.	Reduced or Special Round Trip.	Per Cent of Reduction.
Dixon and Tormey	$2 90			$1 50	48.3	$5 80	$5 00	13.8
Dixon and Pinole	3 00			1 50	50.0	6 00	5 00	16.7
Dixon and Sobrante	3 25	$3 00	8.0	1 50	53.8	6 50	5 00	23.1
Dixon and San Pablo	3 25	3 00	8.0	1 50	53.8	6 50	5 00	23.1
Dixon and Barrett	3 25	3 00	8.0	1 50	53.8	6 50	5 00	23.1
Dixon and Oakland	3 25	3 00	8.0	1 50	53.8	6 50	5 00	23.1
Dixon and San Francisco	3 25	3 00	8.0	1 50	53.8			
Tremont and Teal	1 85			1 50	19.0			
Tremont and Goodyears	2 25			1 50	33.3			
Tremont and Benicia	2 75			1 50	45.5	5 50	5 00	9.1
Tremont and Port Costa	2 90			1 50	48.3	5 80	5 00	13.8
Tremont and Vallejo Junction	3 00			1 50	50.0	6 00	5 00	16.7
Tremont and Tormey	3 15	3 00	5.0	1 50	52.4	6 30	5 00	20.6
Tremont and Pinole	3 25	3 00	8.0	1 50	53.8	6 50	5 00	23.1
Tremont and Sobrante	3 50	3 00	14.7	1 50	57.1	7 00	5 00	28.6
Tremont and San Pablo	3 50	3 00	14.7	1 50	57.1	7 00	5 00	28.6
Tremont and Barrett	3 50	3 00	14.7	1 50	57.1	7 00	5 00	28.6
Tremont and Oakland	3 50	3 00	14.7	1 50	57.1	7 00	5 00	28.6
Tremont and San Francisco	3 50	3 00	14.7	1 50	57.1	7 00	5 00	28.6
Davis and Suisun	1 75			1 50	14.3			
Davis and Teal	2 10			1 50	28.6			
Davis and Goodyears	2 50			1 50	40.0			
Davis and Benicia	3 00			1 50	50.0	6 00	5 00	16.7
Davis and Port Costa	3 15	3 00	5.0	1 50	52.4	6 30	5 00	20.6
Davis and Vallejo Junction	3 25	3 00	8.0	1 50	53.8	6 50	5 00	23.1
Davis and Tormey	3 40	3 00	11.8	1 50	55.9	6 80	5 00	26.5
Davis and Pinole	3 50	3 00	14.7	1 50	57.1	7 00	5 00	28.6
Davis and Sobrante	3 75	3 00	20.0	1 50	60.0	7 50	5 00	33.3
Davis and San Pablo	3 75	3 00	20.0	1 50	60.0	7 50	5 00	33.3
Davis and Barrett	3 75	3 00	20.0	1 50	60.0	7 50	5 00	33.3
Davis and Oakland	3 75	3 00	20.0	1 50	60.0	7 50	5 00	33.3
Davis and San Francisco	3 75	3 00	20.0	1 50	60.0	7 50	5 00	
Webster and Cannon	1 75			1 50	14.3			
Webster and Suisun	2 00			1 50	25.0			
Webster and Teal	2 35			1 50	36.2			

Webster and Goodyears	2 75			1 50	45.5	5 50	5 00	9.1
Webster and Benicia	3 25	3 00	8.0	1 50	53.8	6 50	5 00	23.1
Webster and Port Costa	3 40	3 00	11.8	1 50	55.9	6 80	5 00	26.5
Webster and Vallejo Junction	3 50	3 00	14.7	1 50	57.1	7 00	5 00	28.6
Webster and Tormey	3 65	3 00	17.8	1 50	59.0	7 30	5 00	31.5
Webster and Pinole	3 75	3 00	20.0	1 50	60.0	7 50	5 00	33.3
Webster and Sobrante	4 00	3 00	25.0	1 50	62.5	8 00	5 00	37.5
Webster and San Pablo	4 00	3 00	25.0	1 50	62.5	8 00	5 00	37.5
Webster and Barrett	4 00	3 00	25.0	1 50	62.5	8 00	5 00	37.5
Webster and Oakland	4 00	3 00	25.0	1 50	62.5	8 00	5 00	37.5
Webster and San Francisco	4 00	3 00	25.0	1 50	62.5	8 00	5 00	37.5
Sacramento and Elmira	1 75			1 50	14.3			
Sacramento and Cannon	2 25			1 50	33.3			
Sacramento and Suisun	2 50			1 50	40.0			
Sacramento and Teal	2 85			1 50	47.3	5 70	5 00	12.3
Sacramento and Goodyears	3 25	3 00	8.0	1 50	53.8	6 50	5 00	23.1
Sacramento and Benicia	3 50	3 00	14.7	1 50	57.1	7 00	5 00	28.6
Sacramento and Port Costa	3 65	3 00	17.8	1 50	59.0	7 30	5 00	31.5
Sacramento and Vallejo Junction	3 75	3 00	20.0	1 50	60.0	7 50	5 00	33.3
Sacramento and Tormey	3 90	3 00	23.0	1 50	61.5	7 80	5 00	36.0
Sacramento and Pinole	4 00	3 00	25.0	1 50	62.5	8 00	5 00	37.5
Sacramento and Sobrante	4 00	3 00	25.0	1 50	62.5	8 00	5 00	37.5
Sacramento and San Pablo	4 00	3 00	25.0	1 50	62.5	8 00	5 00	37.5
Sacramento and Barrett	4 00	3 00	25.0	1 50	62.5	8 00	5 00	37.5
Oakland and Napa *	2 00	1 50	25.0					
Oakland and Oak Knoll	2 25	1 75	2.22					
Oakland and Yountville	2 50	2 00	20.0					
Oakland and Oakville	2 75	2 25	18.2					
Oakland and Rutherford	2 75	2 25	18.2					
Oakland and St. Helena	3 00	2 50	16.7					
Oakland and Walnut Grove	3 25	2 75	15.4					
Oakland and Calistoga	3 50	3 00	14.3					
Stock Yards and Napa	2 00	1 50	25.0					
Stock Yards and Oak Knoll	2 25	1 75	22.2					
Stock Yards and Yountville	2 50	2 00	20.0					
Stock Yards and Oakville	2 75	2 25	18.2					
Stock Yards and Rutherford	2 75	2 25	18.2					
Stock Yards and St. Helena	3 00	2 50	16.7					
Stock Yards and Walnut Grove	3 25	2 75	15.4					
Stock Yards and Calistoga	3 50	3 00	14.3					
San Pablo and Napa	2 00	1 50	25.0					

* January 8, 1880.

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APPENDIX VII—Continued.

Between—	Regular Rate Single Trip.	Reduced or Special First Class.	Per Cent of Reduction.	Reduced or Second Class.	Per Cent of Reduction.	Regular Rate Round Trip.	Reduced or Special Round Trip.	Per Cent of Reduction.
San Pablo and Oak Knoll	$2 25	$1 75	22.2					
San Pablo and Yountville	2 50	2 00	20.0					
San Pablo and Oakville	2 75	2 25	18.2					
San Pablo and Rutherford	2 75	2 25	18.2					
San Pablo and St. Helena	3 00	2 50	16.7					
San Pablo and Walnut Grove	3 25	2 75	15.4					
San Pablo and Calistoga	3 50	3 00	14.3					
San Francisco and Thompson*	1 75	1 50	14.3					
San Francisco and Milton†	5 50	5 00	9.1					
Sacramento and Trubody‡	4 25	4 00	5.9					
Sacramento and Yountville	4 25	4 00	5.9					
Sacramento and Oakville	4 50	4 00	11.1					
Sacramento and Rutherford	4 50	4 00	11.1					
Sacramento and Bello	4 75	4 00	15.8					
Sacramento and St. Helena	4 75	4 00	15.8					
Sacramento and Barro	4 90	4 00	18.4					
Sacramento and Bale	5 00	4 00	20.0					
Sacramento and Walnut Grove	5 00	4 00	20.0					
Sacramento and Calistoga	5 25	4 00	23.8					
Davis and Trubody‡	4 25	4 00	5.9					
Davis and Yountville	4 25	4 00	5.9					
Davis and Oakville	4 50	4 00	11.1					
Davis and Rutherford	4 50	4 00	11.1					
Davis and Bello	4 75	4 00	15.8					
Davis and St. Helena	4 75	4 00	15.8					
Davis and Barro	4 90	4 00	18.4					
Davis and Bale	5 00	4 00	20.0					
Davis and Walnut Grove	5 00	4 00	20.0					
Davis and Calistoga	5 25	4 00	23.8					
Woodland and Suisun	2 25			2 00	11.1			
Woodland and Teal	2 60			2 00	23.8			
Woodland and Goodyears	3 00			2 00	33.3			
Woodland and Benicia	3 50			2 00	42.9	7 00	6 00	14.3
Woodland and Port Costa	3 65	3 50	4.1	2 00	45.2	7 30	6 00	17.8
Woodland and Vallejo Junction	3 75	3 50	6.7	2 00	46.7	7 50	6 00	20.0
Woodland and Tormey	3 90	3 50	10.3	2 00	48.7	7 80	6 00	23.1
Woodland and Pinole	4 00	3 50	12.5	2 00	50.0	8 00	6 00	25.0
Woodland and Sobrante	4 25	3 50	18.7	2 00	52.9	8 50	6 00	29.5
Woodland and San Pablo	4 25	3 50	18.7	2 00	52.9	8 50	6 00	29.5
Woodland and Barrett	4 25	3 50	18.7	2 00	52.9	8 50	6 00	29.5
Woodland and Oakland	4 25	3 50	18.7	2 00	52.9	8 50	6 00	29.5
Woodland and San Francisco	4 25	3 50	18.7	2 00	52.9	8 50	6 00	29.5

* March 18, 1880. † May 8, 1880 ‡June 23, 1881.

Commutation.

Between—	Old Rate.	Reduced.	Per Cent of Reduction.	Number of Trips.	Remarks.
San Francisco and Pleasanton	$20 00	$14 00	30.0	60	May 1, 1881.
San Francisco and Livermore	20 00	15 50	22.5	60	
Oakland and Alameda	2 50	1 25	50.0	25	November 4, 1881.
San Francisco and Martinez	22 50	20 00	11.1	30	June 26, 1882.
San Francisco and Vallejo	22 50	20 00	11.1	30	
San Francisco and Thompson	40 00	30 00	25.0	30	
San Francisco and Napa	45 00	30 00	33.3	30	
San Francisco and Yountville	52 50	40 00	23.8	30	
San Francisco and Rutherford	56 00	45 00	20.0	30	
San Francisco and St. Helena	60 00	50 00	16.7	30	
San Francisco and Calistoga	75 00	60 00	20.0	30	

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APPENDIX VII—Continued.

Between—	Regular Rate Round Trip.	Reduced Rate Round Trip.	Per cent of Reduction.	Remarks.
Oakland and Napa	$4 00	$3 00	25.0	Jan. 13, 1880, 5 day excursion.
Oakland and St. Helena	6 00	4 00	33.3	
Oakland and Calistoga	7 00	5 00	28.6	
San Francisco and San Leandro	80	50	37.5	March 3, 1881, 5 day excurs'n.
San Francisco and Lorenzo	1 00	60	40.0	
San Francisco and Haywards	1 30	75	42.3	
San Francisco and Decoto	1 80	1 00	44.5	
San Francisco and Niles	2 00	1 10	45.0	
San Francisco and Washington	2 40	1 30	45.8	
San Francisco and Warm Springs	2 80	1 60	42.9	
Oakland and San Leandro	80	50	37.5	March 3, 1881, 5 day excurs'n.
Oakland and Lorenzo	1 00	60	40.0	
Oakland and Haywards	1 30	75	42.3	
Oakland and Decoto	1 80	1 00	44.5	
Oakland and Niles	2 00	1 10	45.0	
Oakland and Washington	2 40	1 30	45.8	
Oakland and Warm Springs	2 80	1 60	42.9	
San Francisco and Suñol	2 50	1 50	40.0	May 2, 1881, 5 day excursion.
San Francisco and Pleasanton	3 00	2 00	33.4	
San Francisco and Livermore	3 50	2 50	28.9	
Oakland and Suñol	2 50	1 50	40.0	May 2, 1881, 5 day excursion.
Oakland and Pleasanton	3 00	2 00	33.3	
Oakland and Livermore	3 50	2 50	28.9	
San Francisco and Teal	3 80	2 75	27.6	June 15, 1881, 5 day excursion.
Oakland and Teal	3 80	2 75	27.6	June 15, 1881, 5 day excursion.
San Francisco, Martinez, and Benicia	2 00	1 50	25.0	Oct. 8, 1881, 5 day excursion.
Milpitas and San Francisco	3 20	2 50	21.9	Jan. 6, 1882, 5 day excursion.
Benicia and San Francisco	2 00	1 00	50.0	May 26, 1882, Sunday excur'n.
Martinez and San Francisco	2 00	1 00	50.0	
Port Costa and San Francisco	2 00	1 00	50.0	
Vallejo and San Francisco	2 00	1 00	50.0	
Vallejo Junction and San Francisco	2 00	1 00	50.0	
Anaheim and San Francisco	37 00	35 80	3.1	In effect December 5, 1881.
Santa Ana and San Francisco	38 00	36 25	4.6	
San Gabriel and San Francisco	35 00	34 75	.7	
Savanna and San Francisco	35 50	34 85	1.8	
Monte and San Francisco	35 50	35 00	1.4	
Spadra and San Francisco	37 00	36 00	2.7	
Pomona and San Francisco	37 50	36 25	3.4	
Colton and San Francisco	40 00	38 00	5.0	
Sepulveda and Los Angeles	1 00	75	25.0	In effect December 5, 1881.
San Fernando and Los Angeles	2 50	1 50	40.0	
Tunnel and Los Angeles	3 20	1 85	42.2	
Newhall and Los Angeles	3 70	2 25	39.2	
Downey and Los Angeles	1 00	85	15.0	
Norwalk and Los Angeles	1 50	1 25	16.7	
Costa and Los Angeles	2 50	1 65	34.0	
Anaheim and Los Angeles	3 00	1 85	38.3	
Orange and Los Angeles	4 00	2 25	43.8	
Santa Ana and Los Angeles	4 00	3 25	18.8	
San Gabriel and Los Angeles	1 00	75	25.0	
Savanna and Los Angeles	1 50	85	43.3	
Monte and Los Angeles	1 50	1 00	33.4	
Puente and Los Angeles	2 00	1 35	32.5	
Spadra and Los Angeles	3 00	2 00	33.4	
Pomona and Los Angeles	3 50	2 25	35.7	
Cucamonga and Los Angeles	4 50	3 00	33.4	
Colton and Los Angeles	6 00	4 00	33.4	
Mound City and Los Angeles	6 60	4 25	35.6	
El Casco and Los Angeles	8 80	5 00	43.2	
San Gorgonio and Los Angeles	10 50	5 75	45.2	
Banning and Los Angeles	11 70	6 50	48.7	

APPENDIX VII—Continued.

Local Coupon.

Between—	Regular Rate.	Reduced Rate.	Per Cent of Reduction.	Remarks.
Haywards and San José	$1 20	$1 00	16.7	June 3, 1880—Limited time, Santa Cruz and Monterey.
Lathrop and San José	3 50	2 25	35.7	
Stockton and San José	3 50	2 25	35.7	
Sacramento and San José	4 00	2 75	31.2	
Marysville and San José	5 50	5 25	4.5	
Colfax and San José	7 75	5 25	32.3	
Truckee and San José	14 00	10 75	23.2	
Reno and San José	16 75	13 25	20.9	
San Francisco and San José and return	2 20	2 00	9.1	June 20, 1881—Limited time, Santa Cruz and Monterey.
Oakland and San José and return	2 20	2 00	9.1	
Stockton and San José and return	4 70	4 50	4.3	May 6, 1881—Limited time, Santa Cruz and Monterey.
Sacramento and San José and return	5 35	5 00	6.5	
Marysville and San José and return	7 35	7 00	4.8	
San Francisco and Truckee and return	28 00	22 00	21.4	July 22, 1881—Limited time, Lake Tahoe.
Los Angeles and Caliente	10 00	6 75	32.5	January 23, 1882—Limited time, Independence.
San Francisco and Carbondale	5 75	5 00	13.0	March 14, 1882—Limited time, Plymouth.
Sacramento and Carbondale	3 00	2 25	25.0	
San Francisco and Colfax	7 75	6 75	12.9	May 16, 1882—Limited time, Grass Valley and Nevada City.
Oakland and Colfax	7 75	6 75	12.9	
San Francisco and Calistoga and return	5 00	3 50	30.0	May 8, 1882—Limited time, Geysers.
San Francisco and Calistoga	3 00	2 50	16.7	May 8, 1882—Limited time, Geysers and Lakeport.
San Francisco and Calistoga and return	6 00	4 50	25.0	May 8, 1882—Limited time, Lakeport.
San Francisco and Colfax	7 75	5 75	25.8	June 22, 1882—Limited time, North San Juan.
San Francisco and Colfax	7 75	5 75	25.8	June 22, 1882—Limited time, Comptonville.
San Francisco and Colfax	7 75	5 75	25.8	June 22, 1882—Limited time, Forest City.
San Francisco and Colfax	7 75	5 75	25.8	June 22, 1882—Limited time, Downieville.
San Francisco and Newhall and return	34 00	27 00	20.6	June 15, 1882—Limited time, San Buenaventura.
San Francisco and Williams	6 75	5 75	15.0	June 22, 1882—Limited time, Bartlett Springs.

Average Reduction.

Special First Class	15.5 per cent of tariff rates.	Third Class	29.4 per cent of tariff rates.
Second Class	23.8 per cent of tariff rates.	Round Trip Class	23.7 per cent of tariff rates.
Total			25.7 per cent of tariff rates.

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APPENDIX VIII.

STATEMENT

Showing Reductions in Local Ticket Rates within the State of California, from July 22 to October 1, 1882.

[In effect September 1.]

SPECIAL ROUND TRIP.

Total average reduction 29 5/10 per cent of tariff rates, covering a distance of 350 miles.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
San Francisco and Whitneys	$8 00	$7 45	6.9
San Francisco and Lincoln	8 50	7 85	7.6
San Francisco and Ewings	9 00	8 25	8.3
San Francisco and Sheridan	9 50	8 60	9.5
San Francisco and Wheatland	10 00	8 70	13.0
San Francisco and Reeds	10 00	8 80	12.0
San Francisco and Yuba	10 00	8 90	11.0
San Francisco and Marysville	10 00	9 00	10.0
San Francisco and Lomo	11 00	9 70	11.8
San Francisco and Live Oak	11 50	10 10	12.2
San Francisco and Gridley	12 50	10 75	14.0
San Francisco and Biggs	13 00	11 10	14.6
San Francisco and Silsby	14 00	11 70	16.4
San Francisco and Nelson	14 00	12 10	13.6
San Francisco and Durham	15 00	12 75	15.0
San Francisco and Chico	16 00	13 35	16.6
San Francisco and Shaws	16 50	13 85	16.1
San Francisco and Nord	17 00	14 05	17.4
San Francisco and Anita	17 00	14 30	15.9
San Francisco and Cana	17 50	14 55	16.9
San Francisco and Soto	17 50	14 80	15.4
San Francisco and Vina	18 00	15 25	15.3
San Francisco and Sesma	19 00	16 00	15.8
San Francisco and Tehama	19 00	16 05	16.1
San Francisco and Tyler	19 30	16 30	15.5
San Francisco and Oat Creek	19 60	16 50	15.8
San Francisco and Rawson	20 00	16 80	16.0
San Francisco and Red Bluff	20 50	17 25	15.9
San Francisco and Hooker	22 00	18 30	16.8
San Francisco and Buckeye	23 00	18 80	18.3
San Francisco and Cottonwood	23 00	19 00	17.4
San Francisco and Anderson	24 00	19 65	18.1
San Francisco and Clear Creek	25 00	20 25	19.0
San Francisco and Redding	25 50	20 75	18.6
Oakland, Stock Yards, Stege, San Pablo, Pinole, Vallejo Junction, Port Costa, Benicia, Goodyears, Army Point	Same as San Francisco.		

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Suisun and Whitneys	$8 00	$6 45	19.4
Suisun and Lincoln	8 50	6 85	19.4
Suisun and Ewings	9 00	7 25	19.4
Suisun and Sheridan	9 50	7 60	20.0
Suisun and Wheatland	10 00	7 70	23.0
Suisun and Reeds	10 00	7 80	22.0
Suisun and Yuba	10 00	7 90	21.0
Suisun and Marysville	10 00	8 00	20.0
Suisan and Lomo	11 00	8 70	20.9
Suisun and Live Oak	11 50	9 10	20.9
Suisun and Gridley	12 50	9 75	22.0
Suisun and Biggs	13 00	10 10	22.3
Suisun and Silsby	14 00	10 65	23.9
Suisun and Nelson	14 00	11 10	20.7
Suisun and Durham	15 00	11 75	21.7
Suisun and Chico	16 00	12 35	22.8
Suisun and Shaws	16 50	12 85	22.1
Suisun and Nord	17 00	13 05	23.2
Suisun and Anita	17 00	13 30	21.8
Suisun and Cana	17 50	13 55	22.6
Suisun and Soto	17 50	13 75	21.4
Suisun and Vina	18 00	13 75	23.6
Suisun and Sesma	19 00	13 75	27.6
Suisun and Tehama	19 00	13 75	27.6
Suisun and Tyler	19 30	14 00	27.5
Suisun and Oat Creek	19 60	14 20	27.1
Suisun and Rawson	20 00	14 50	27.5
Suisun and Red Bluff	20 50	14 95	27.1
Suisun and Hooker	22 00	16 00	27.3
Suisun and Buckeye	23 00	16 50	28.3
Suisun and Cottonwood	23 00	16 70	27.4
Suisun and Anderson	24 00	17 35	27.7
Suisun and Clear Creek	25 00	17 95	28.2
Suisun and Redding	25 50	18 45	27.6
Elmira and Whitneys	6 50	5 40	16.9
Elmira and Lincoln	7 00	5 80	17.1
Elmira and Ewings	7 50	6 20	17.3
Elmira and Sheridan	8 00	6 55	18.1
Elmira and Wheatland	8 50	6 65	21.7
Elmira and Reeds	8 50	6 75	20.6
Elmira and Yuba	8 50	6 85	19.4
Elmira and Marysville	8 50	6 95	18.2
Elmira and Lomo	9 50	7 65	19.5
Elmira and Live Oak	10 00	8 05	19.5
Elmira and Gridley	11 00	8 70	20.9
Elmira and Biggs	11 50	9 05	21.3
Elmira and Silsby	12 50	9 65	22.8
Elmira and Nelson	12 50	10 05	19.6
Elmira and Durham	13 50	10 70	20.7
Elmira and Chico	14 50	11 30	22.1
Elmira and Shaws	15 00	11 80	21.3
Elmira and Nord	15 50	12 00	22.6
Elmira and Anita	15 50	12 25	21.0
Elmira and Cana	16 00	12 50	21.9
Elmira and Soto	16 00	12 70	20.6
Elmira and Vina	16 50	12 70	23.0
Elmira and Sesma	17 50	12 70	27.4
Elmira and Tehama	17 50	12 70	27.4
Elmira and Tyler	17 80	12 95	27.2
Elmira and Oat Creek	18 10	13 15	27.3
Elmira and Rawson	18 50	13 45	27.3
Elmira and Red Bluff	19 00	13 90	26.8
Elmira and Hooker	20 50	14 95	27.1
Elmira and Buckeye	21 50	15 45	28.1
Elmira and Cottonwood	21 50	15 65	27.2

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Elmira and Anderson	$22 50	$16 30	27.6
Elmira and Clear Creek	23 50	16 90	28.1
Elmira and Redding	24 00	17 40	27.5
Batavia and Whitneys	6 00	4 90	18.3
Batavia and Lincoln	6 50	5 30	18.5
Batavia and Ewings	7 00	5 70	18.6
Batavia and Sheridan	7 50	6 05	19.3
Batavia and Wheatland	8 00	6 15	23.1
Batavia and Reeds	8 00	6 25	21.9
Batavia and Yuba	8 00	6 35	20.6
Batavia and Marysville	8 00	6 45	19.4
Batavia and Lomo	9 00	7 15	20.6
Batavia and Live Oak	9 50	7 55	20.5
Batavia and Gridley	10 50	8 20	20.2
Batavia and Biggs	11 00	8 55	22.3
Batavia and Silsby	12 00	9 15	23.8
Batavia and Nelson	12 00	9 55	20.4
Batavia and Durham	13 00	10 20	21.5
Batavia and Chico	14 00	10 80	22.9
Batavia and Shaws	14 50	11 30	22.1
Batavia and Nord	15 00	11 50	23.3
Batavia and Anita	15 00	11 75	21.7
Batavia and Cana	15 50	12 00	22.6
Batavia and Soto	15 50	12 20	21.3
Batavia and Vina	16 00	12 20	23.8
Batavia and Sesma	17 00	12 20	28.2
Batavia and Tehama	17 00	12 20	28.2
Batavia and Tyler	17 30	12 45	28.0
Batavia and Oak Creek	17 60	12 65	28.1
Batavia and Rawson	18 00	12 95	28.1
Batavia and Red Bluff	18 50	13 40	27.6
Batavia and Hooker	20 00	14 45	27.7
Batavia and Buckeye	21 00	14 95	28.8
Batavia and Cottonwood	21 00	15 15	27.9
Batavia and Anderson	22 00	15 80	28.2
Batavia and Clear Creek	23 00	16 40	28.7
Batavia and Redding	23 50	16 90	28.1
Dixon and Whitneys	5 50	4 55	17.3
Dixon and Lincoln	6 00	4 95	17.5
Dixon and Ewings	6 50	5 35	17.7
Dixon and Sheridan	7 00	5 70	18.6
Dixon and Wheatland	7 50	5 80	22.7
Dixon and Reeds	7 50	5 90	21.3
Dixon and Yuba	7 50	6 00	20.0
Dixon and Marysville	7 50	6 10	18.7
Dixon and Lomo	8 50	6 80	20.0
Dixon and Live Oak	9 00	7 20	20.0
Dixon and Gridley	10 00	7 85	21.5
Dixon and Biggs	10 50	8 20	21.9
Dixon and Silsby	11 50	8 80	23.5
Dixon and Nelson	11 50	9 20	20.0
Dixon and Durham	12 50	9 85	21.2
Dixon and Chico	13 50	10 45	22.6
Dixon and Shaws	14 00	10 95	21.8
Dixon and Nord	14 50	11 15	23.1
Dixon and Anita	14 50	11 40	21.4
Dixon and Cana	15 00	11 65	22.3
Dixon and Soto	15 00	11 85	21.0
Dixon and Vina	15 50	11 85	23.5
Dixon and Sesma	16 50	11 85	28.2
Dixon and Tehama	16 50	11 85	28.2
Dixon and Tyler	16 80	12 10	28.0
Dixon and Oak Creek	17 10	12 30	28.1
Dixon and Rawson	17 50	12 60	28.0
Dixon and Red Bluff	18 00	13 05	27.5
Dixon and Hooker	19 50	14 10	27.7

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Dixon and Buckeye	$20 50	$14 60	28.8
Dixon and Cottonwood	20 50	14 80	27.8
Dixon and Anderson	21 50	15 45	28.1
Dixon and Clear Creek	22 50	16 05	28.7
Dixon and Redding	23 00	16 55	28.0
Davis and Whitneys	4 50	3 75	16.7
Davis and Lincoln	5 00	4 15	17.0
Davis and Ewings	5 50	4 55	17.2
Davis and Sheridan	6 00	4 90	18.3
Davis and Wheatland	6 50	5 00	23.1
Davis and Reeds	6 50	5 10	21.5
Davis and Yuba	6 50	5 20	20.0
Davis and Marysville	6 50	5 30	18.5
Davis and Lomo	7 50	6 00	20.0
Davis and Live Oak	8 00	6 40	20.0
Davis and Gridley	9 00	7 05	21.7
Davis and Biggs	9 50	7 40	22.1
Davis and Silsby	10 50	8 00	23.8
Davis and Nelson	10 50	8 40	20.0
Davis and Durham	11 50	9 05	21.3
Davis and Chico	12 50	9 65	22.8
Davis and Shaws	13 00	10 15	21.9
Davis and Nord	13 50	10 35	23.3
Davis and Anita	13 50	10 60	21.5
Davis and Cana	14 00	10 85	22.5
Davis and Soto	14 00	11 05	21.1
Davis and Vina	14 50	11 05	23.7
Davis and Sesma	15 50	11 05	28.7
Davis and Tehama	15 50	11 05	28.7
Davis and Tyler	15 80	11 30	28.5
Davis and Oat Creek	16 10	11 50	28.6
Davis and Rawson	16 50	11 80	28.5
Davis and Red Bluff	17 00	12 25	27.9
Davis and Hooker	18 50	13 30	28.1
Davis and Buckeye	19 50	13 80	29.2
Davis and Cottonwood	19 50	14 00	28.2
Davis and Anderson	20 50	14 65	28.5
Davis and Clear Creek	21 50	15 25	29.1
Davis and Redding	22 00	15 75	28.4
Sacramento and Whitneys	3 00	2 45	18.3
Sacramento and Lincoln	3 50	2 85	18.6
Sacramento and Ewings	4 00	3 25	18.8
Sacramento and Sheridan	4 50	3 60	20.0
Sacramento and Wheatland	5 00	3 70	26.0
Sacramento and Reeds	5 00	3 80	24.0
Sacramento and Yuba	5 00	3 90	22.0
Sacramento and Marysville	5 00	4 00	20.0
Sacramento and Lomo	6 00	4 70	21.7
Sacramento and Live Oak	6 50	5 10	21.5
Sacramento and Gridley	7 50	5 75	23.3
Sacramento and Biggs	8 00	6 10	23.8
Sacramento and Silsby	9 00	6 70	25.6
Sacramento and Nelson	9 00	7 10	21.1
Sacramento and Durham	10 00	7 75	22.5
Sacramento and Chico	11 00	8 35	24.1
Sacramento and Shaws	11 50	8 85	23.0
Sacramento and Nord	12 00	9 05	24.6
Sacramento and Anita	12 00	9 30	22.5
Sacramento and Cana	12 50	9 55	23.6
Sacramento and Soto	12 50	9 80	21.6
Sacramento and Vina	13 00	10 25	21.2
Sacramento and Sesma	14 00	11 00	21.4
Sacramento and Tehama	14 00	11 05	21.1
Sacramento and Tyler	14 30	11 30	21.0
Sacramento and Oat Creek	14 60	11 50	21.2
Sacramento and Rawson	15 00	11 80	21.3

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Sacramento and Red Bluff	$15 50	$12 25	21.0
Sacramento and Hooker	17 00	13 30	21.8
Sacramento and Buckeye	18 00	13 80	23.3
Sacramento and Cottonwood	18 00	14 00	22.2
Sacramento and Anderson	19 00	14 65	22.9
Sacramento and Clear Creek	20 00	15 25	23.8
Sacramento and Redding	20 50	15 75	23.2
Antelope and Whitneys	1 50	1 00	33.3
Antelope and Lincoln	2 00	1 40	30.0
Antelope and Ewings	2 50	1 80	28.0
Antelope and Sheridan	3 00	2 15	28.3
Antelope and Wheatland	3 50	2 50	28.9
Antelope and Reeds	4 00	3 10	22.5
Antelope and Yuba	4 50	3 60	20.0
Antelope and Marysville	4 50	3 75	16.7
Antelope and Lomo	5 50	4 45	19.2
Antelope and Live Oak	6 00	4 85	19.2
Antelope and Gridleys	7 00	5 50	21.4
Antelope and Biggs	7 50	5 85	22.0
Antelope and Silsby	8 50	6 45	24.1
Antelope and Nelson	8 50	6 85	19.4
Antelope and Durham	9 50	7 50	21.1
Antelope and Chico	10 50	8 10	22.9
Antelope and Shaws	11 00	8 60	21.8
Antelope and Nord	11 50	8 80	23.5
Antelope and Anita	11 50	9 05	21.3
Antelope and Cana	12 00	9 30	22.5
Antelope and Soto	12 00	9 55	20.4
Antelope and Vina	12 50	10 00	20.0
Antelope and Sesma	13 50	10 75	20.4
Antelope and Tehama	13 50	10 80	20.0
Antelope and Tyler	13 80	11 05	19.9
Antelope and Oat Creek	14 10	11 25	20.2
Antelope and Rawson	14 50	11 55	20.3
Antelope and Red Bluff	15 00	12 00	20.0
Antelope and Hooker	16 50	13 05	21.0
Antelope and Buckeye	17 50	13 55	22.6
Antelope and Cottonwood	17 50	13 75	21.4
Antelope and Anderson	18 50	14 40	22.2
Antelope and Clear Creek	19 50	15 00	23.2
Antelope and Redding	20 00	15 50	22.5
Junction and Whitneys	1 00	60	40.0
Junction and Lincoln	1 50	1 05	30.0
Junction and Ewings	2 00	1 45	27.5
Junction and Sheridan	2 50	1 80	28.0
Junction and Wheatland	3 00	2 15	28.3
Junction and Reeds	3 50	2 75	21.4
Junction and Yuba	4 00	3 25	18.8
Junction and Marysville	4 00	3 40	15.0
Junction and Lomo	5 00	4 10	18.0
Junction and Live Oak	5 50	4 50	18.2
Junction and Gridley	6 50	5 15	20.8
Junction and Biggs	7 00	5 50	21.4
Junction and Silsby	8 00	6 10	23.8
Junction and Nelson	8 00	6 50	18.8
Junction and Durham	9 00	7 15	20.6
Junction and Chico	10 50	7 75	22.5
Junction and Shaws	10 50	8 25	21.4
Junction and Nord	11 00	8 45	23.2
Junction and Anita	11 00	8 70	20.9
Junction and Cana	11 50	8 95	22.2
Junction and Soto	11 50	9 20	20.0
Junction and Vina	12 00	9 65	19.6
Junction and Sesma	13 00	10 40	20.0
Junction and Tehama	13 00	10 45	19.7
Junction and Tyler	13 30	10 70	19.5

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Junction and Oat Creek	$13 60	$10 90	19.9
Junction and Rawson	14 00	11 20	20.0
Junction and Red Bluff	14 50	11 65	19.7
Junction and Hooker	16 00	12 70	20.6
Junction and Buckeye	17 00	13 20	22.4
Junction and Cottonwood	17 00	13 40	21.2
Junction and Anderson	18 00	14 05	21.9
Junction and Clear Creek	19 00	14 65	22.9
Junction and Redding	19 50	15 15	22.3
Lincoln and Sheridan	1 00	75	25.0
Lincoln and Wheatland	1 50	1 10	26.7
Lincoln and Reeds	2 00	1 70	32.0
Lincoln and Yuba	3 00	2 20	26.7
Lincoln and Marysville	3 50	2 35	32.9
Lincoln and Lomo	4 50	3 05	32.2
Lincoln and Live Oak	5 00	3 45	31.0
Lincoln and Gridley	6 00	4 10	31.7
Lincoln and Biggs	6 50	4 45	31.5
Lincoln and Silsby	7 50	5 05	32.7
Lincoln and Nelson	7 50	5 45	27.3
Lincoln and Durham	8 50	6 10	28.2
Lincoln and Chico	9 50	6 70	29.5
Lincoln and Shaws	10 00	7 20	28.0
Lincoln and Nord	10 50	7 40	29.5
Lincoln and Anita	10 50	7 65	27.1
Lincoln and Cana	11 00	7 90	28.2
Lincoln and Soto	11 00	8 15	25.9
Lincoln and Vina	11 50	8 60	25.2
Lincoln and Sesma	12 50	9 35	25.2
Lincoln and Tehama	12 50	9 40	24.8
Lincoln and Tyler	12 80	9 65	24.6
Lincoln and Oat Creek	13 10	9 85	24.8
Lincoln and Rawson	13 50	10 15	24.8
Lincoln and Red Bluff	14 00	10 60	24.3
Lincoln and Hooker	15 50	11 65	24.8
Lincoln and Buckeye	16 50	12 15	26.4
Lincoln and Cottonwood	16 50	12 35	25.2
Lincoln and Anderson	17 50	13 00	25.7
Lincoln and Clear Creek	18 50	13 60	26.5
Lincoln and Redding	19 00	14 10	25.8
Sheridan and Reeds	1 50	95	36.7
Sheridan and Yuba	2 00	1 45	27.5
Sheridan and Marysville	2 50	1 60	36.0
Sheridan and Lomo	3 50	2 30	34.3
Sheridan and Live Oak	4 00	2 70	32.5
Sheridan and Gridley	5 00	3 35	33.0
Sheridan and Biggs	5 50	3 70	32.7
Sheridan and Silsby	6 50	4 30	33.8
Sheridan and Nelson	6 50	4 70	27.7
Sheridan and Durham	7 50	5 35	28.7
Sheridan and Chico	8 50	5 95	30.0
Sheridan and Shaws	9 00	6 45	28.3
Sheridan and Nord	9 50	6 65	30.0
Sheridan and Anita	9 50	6 90	27.4
Sheridan and Cana	10 00	7 15	28.5
Sheridan and Soto	10 00	7 40	26.0
Sheridan and Vina	10 50	7 85	25.2
Sheridan and Sesma	11 50	8 60	25.2
Sheridan and Tehama	11 50	8 65	24.8
Sheridan and Tyler	11 80	8 90	24.6
Sheridan and Oat Creek	12 10	9 10	24.8
Sheridan and Rawson	12 50	9 40	24.8
Sheridan and Red Bluff	13 00	9 85	24.2
Sheridan and Hooker	14 50	10 90	24.8
Sheridan and Buckeye	15 50	11 40	26.5
Sheridan and Cottonwood	15 50	11 60	25.1

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Sheridan and Anderson	$16 50	$12 25	25.8
Sheridan and Clear Creek	17 50	12 85	26.6
Sheridan and Redding	18 00	13 35	25.8
Wheatland and Reeds	1 00	65	35.0
Wheatland and Yuba	1 50	1 10	26.7
Wheatland and Marysville	2 00	1 25	37.5
Wheatland and Lomo	3 00	1 95	35.0
Wheatland and Live Oak	3 50	2 35	32.9
Wheatland and Gridley	4 50	3 00	33.3
Wheatland and Biggs	5 00	3 35	33.0
Wheatland and Silsby	6 00	3 95	34.2
Wheatland and Nelson	6 00	4 35	27.5
Wheatland and Durham	7 00	5 00	28.6
Wheatland and Chico	8 00	5 60	30.0
Wheatland and Shaws	8 50	6 10	28.2
Wheatland and Nord	9 00	6 30	30.0
Wheatland and Anita	9 00	6 55	27.2
Wheatland and Cana	9 50	6 80	28.4
Wheatland and Soto	9 50	7 05	25.8
Wheatland and Vina	10 00	7 50	25.0
Wheatland and Sesma	11 00	8 25	25.0
Wheatland and Tehama	11 00	8 30	24.5
Wheatland and Tyler	11 30	8 55	24.3
Wheatland and Oat Creek	11 60	8 75	24.6
Wheatland and Rawson	12 00	9 05	24.6
Wheatland and Red Bluff	12 50	9 50	24.0
Wheatland and Hooker	14 00	10 55	24.6
Wheatland and Buckeye	15 00	11 05	26.3
Wheatland and Cottonwood	15 00	11 25	25.0
Wheatland and Anderson	16 00	11 90	25.6
Wheatland and Clear Creek	17 00	12 50	26.5
Wheatland and Redding	17 50	13 00	25.7
Marysville and Lomo	1 00	70	30.0
Marysville and Live Oak	1 50	1 10	26.6
Marysville and Gridley	2 50	1 75	30.0
Marysville and Biggs	3 00	2 10	30.0
Marysville and Silsby	4 00	2 70	32.5
Marysville and Nelson	4 00	3 10	22.5
Marysville and Durham	5 00	3 75	25.0
Marysville and Chico	6 00	4 35	27.5
Marysville and Shaws	6 50	4 85	25.4
Marysville and Nord	7 00	5 05	27.8
Marysville and Anita	7 00	5 30	24.3
Marysville and Cana	7 50	5 55	26.0
Marysville and Soto	7 50	5 80	22.7
Marysville and Vina	8 00	6 25	22.0
Marysville and Sesma	9 00	7 00	22.2
Marysville and Tehama	9 00	7 05	21.7
Marysville and Tyler	9 30	7 30	21.5
Marysville and Oat Creek	9 60	7 50	21.9
Marysville and Rawson	10 00	7 80	22.0
Marysville and Red Bluff	10 50	8 25	21.4
Marysville and Hooker	12 00	9 30	22.5
Marysville and Buckeye	13 00	9 80	24.6
Marysville and Cottonwood	13 00	10 00	30.0
Marysville and Anderson	14 00	10 65	23.9
Marysville and Clear Creek	15 00	11 25	31.7
Marysville and Redding	15 50	11 75	24.2
Live Oak and Gridley	1 00	65	35.0
Live Oak and Biggs	1 50	1 00	33.3
Live Oak and Silsby	2 50	1 60	36.0
Live Oak and Nelson	3 00	2 00	33.3
Live Oak and Durham	3 50	2 65	24.3
Live Oak and Chico	4 50	3 25	27.8
Live Oak and Shaws	5 00	3 75	25.0
Live Oak and Nord	5 50	3 95	28.2

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Live Oak and Anita	$5 50	$4 20	23.6
Live Oak and Cana	6 00	4 45	25.8
Live Oak and Soto	6 00	4 70	21.7
Live Oak and Vina	6 50	5 15	20.8
Live Oak and Sesma	7 50	5 90	21.3
Live Oak and Tehama	7 50	5 95	20.7
Live Oak and Tyler	7 80	6 20	20.5
Live Oak and Oat Creek	8 10	6 40	21.0
Live Oak and Rawson	8 50	6 70	21.2
Live Oak and Red Bluff	9 00	7 15	20.6
Live Oak and Hooker	10 50	8 20	21.9
Live Oak and Buckeye	11 50	8 70	24.3
Live Oak and Cottonwood	11 50	8 90	22.6
Live Oak and Anderson	12 50	9 55	23.6
Live Oak and Clear Creek	13 50	10 15	24.8
Live Oak and Redding	14 00	10 65	23.9
Gridley and Silsby	1 50	95	36.7
Gridley and Nelson	2 00	1 35	32.5
Gridley and Durham	2 50	2 00	20.0
Gridley and Chico	3 50	2 60	25.7
Gridley and Shaws	4 00	3 10	22.5
Gridley and Nord	4 50	3 30	26.7
Gridley and Anita	4 50	3 55	21.1
Gridley and Cana	5 00	3 80	24.0
Gridley and Soto	5 00	4 05	19.0
Gridley and Vina	5 50	4 50	18.2
Gridley and Sesma	6 50	5 25	19.2
Gridley and Tehama	6 50	5 30	18.5
Gridley and Tyler	6 80	5 55	18.4
Gridley and Oat Creek	7 10	5 75	19.0
Gridley and Rawson	7 50	6 05	19.3
Gridley and Red Bluff	8 00	6 50	18.8
Gridley and Hooker	9 50	7 55	20.5
Gridley and Buckeye	10 50	8 05	23.3
Gridley and Cottonwood	10 50	8 25	21.4
Gridley and Anderson	11 50	8 90	22.6
Gridley and Clear Creek	12 50	9 50	24.0
Gridley and Redding	13 00	10 00	23.1
Biggs and Silsby	1 00	60	40.0
Biggs and Nelson	1 50	1 00	33.3
Biggs and Durham	2 00	1 65	17.5
Biggs and Chico	3 00	2 25	25.0
Biggs and Shaws	3 50	2 75	21.4
Biggs and Nord	4 00	2 95	26.3
Biggs and Anita	4 00	3 20	20.0
Biggs and Cana	4 50	3 45	23.3
Biggs and Soto	4 50	3 70	17.8
Biggs and Vina	5 00	4 15	17.0
Biggs and Sesma	6 00	4 90	18.3
Biggs and Tehama	6 00	4 95	17.5
Biggs and Tyler	6 30	5 20	17.5
Biggs and Oat Creek	6 60	5 40	18.2
Biggs and Rawson	7 00	5 70	18.6
Biggs and Red Bluff	7 50	6 15	18.0
Biggs and Hooker	9 00	7 20	20.0
Biggs and Buckeye	10 00	7 70	23.0
Biggs and Cottonwood	10 00	7 90	21.0
Biggs and Anderson	11 00	8 55	22.3
Biggs and Clear Creek	12 00	9 15	23.8
Biggs and Redding	12 50	9 65	22.8
Nelson and Durham	1 00	65	35.0
Nelson and Chico	2 00	1 25	37.5
Nelson and Shaws	2 50	1 75	30.0
Nelson and Nord	3 00	1 95	35.0
Nelson and Anita	3 00	2 20	26.7
Nelson and Cana	3 50	2 45	30.0

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Nelson and Soto	$3 50	$2 70	22.9
Nelson and Vina	4 00	3 15	21.3
Nelson and Sesma	5 00	3 90	22.0
Nelson and Tehama	5 00	3 95	21.0
Nelson and Tyler	5 30	4 20	20.8
Nelson and Oat Creek	5 60	4 40	21.4
Nelson and Rawson	6 00	4 70	21.7
Nelson and Red Bluff	6 50	5 15	20.8
Nelson and Hooker	8 00	6 20	22.5
Nelson and Buckeye	9 00	6 70	25.6
Nelson and Cottonwood	9 00	6 90	23.3
Nelson and Anderson	10 00	7 55	24.5
Nelson and Clear Creek	11 00	8 15	25.9
Nelson and Redding	11 50	8 65	24.8
Durham and Chico	1 00	60	40.0
Durham and Shaws	1 50	1 10	26.7
Durham and Nord	2 00	1 30	35.0
Durham and Anita	2 00	1 55	22.5
Durham and Cana	2 50	1 80	28.0
Durham and Soto	2 50	2 05	18.0
Durham and Vina	3 00	2 50	16.7
Durham and Sesma	4 00	3 25	18.8
Durham and Tehama	4 00	3 30	17.5
Durham and Tyler	4 30	3 55	17.4
Durham and Oat Creek	4 60	3 75	18.5
Durham and Rawson	5 00	4 05	19.0
Durham and Red Bluff	5 50	4 50	18.2
Durham and Hooker	7 00	5 55	20.7
Durham and Buckeye	8 00	6 05	24.4
Durham and Cottonwood	8 00	6 25	21.9
Durham and Anderson	9 00	6 90	23.3
Durham and Clear Creek	10 00	7 50	25.0
Durham and Redding	10 50	8 00	23.8
Chico and Nord	1 00	70	30.0
Chico and Anita	1 00	95	5.0
Chico and Cana	1 50	1 20	20.0
Chico and Soto	1 50	1 45	3.3
Chico and Vina	2 00	1 90	5.0
Chico and Sesma	3 00	2 65	11.7
Chico and Tehama	3 00	2 70	10.0
Chico and Tyler	3 30	2 95	10.6
Chico and Oat Creek	3 60	3 15	12.5
Chico and Rawson	4 00	3 45	13.8
Chico and Red Bluff	4 50	3 90	13.3
Chico and Hooker	6 00	4 95	17.5
Chico and Buckeye	7 00	5 45	22.1
Chico and Cottonwood	7 00	5 65	19.3
Chico and Anderson	8 00	6 30	21.3
Chico and Clear Creek	9 00	6 90	23.3
Chico and Redding	9 50	7 40	22.1
Nord and Cana	1 00	50	50.0
Nord and Soto	1 00	75	25.0
Nord and Vina	1 50	1 20	20.0
Nord and Sesma	2 50	1 95	22.0
Nord and Tehama	2 50	2 00	20.0
Nord and Tyler	2 80	2 25	19.6
Nord and Oat Creek	3 10	2 45	21.0
Nord and Rawson	3 50	2 75	21.4
Nord and Red Bluff	4 00	3 20	20.0
Nord and Hooker	5 50	4 25	22.7
Nord and Buckeye	6 50	4 75	26.9
Nord and Cottonwood	6 50	4 95	23.8
Nord and Anderson	7 50	5 60	25.3
Nord and Clear Creek	8 50	6 20	27.1
Nord and Redding	9 00	6 70	25.6
Cana and Sesma	1 50	1 45	3.3

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Cana and Tyler	$1 80	$1 75	2.8
Cana and Oat Creek	2 10	1 95	7.1
Cana and Rawson	2 50	2 25	10.0
Cana and Red Bluff	3 00	2 70	10.0
Cana and Hooker	4 50	3 75	16.7
Cana and Buckeye	5 50	4 25	22.7
Cana and Cottonwood	5 50	4 45	19.1
Cana and Anderson	6 50	5 10	21.5
Cana and Clear Creek	7 50	5 70	24.0
Cana and Redding	8 00	5 20	22.5
Vina and Sesma	1 00	75	25.0
Vina and Tehama	1 00	80	20.0
Vina and Tyler	1 30	1 05	19.2
Vina and Oat Creek	1 60	1 25	21.9
Vina and Rawson	2 00	1 55	22.5
Vina and Red Bluff	2 50	2 00	20.0
Vina and Hooker	4 00	3 05	23.8
Vina and Buckeye	5 00	3 55	29.0
Vina and Cottonwood	5 00	3 75	25.0
Vina and Anderson	6 00	4 40	26.7
Vina and Clear Creek	7 00	5 00	28.6
Vina and Redding	7 50	5 50	26.7
Tehama and Oat Creek	60	50	16.7
Tehama and Rawson	1 00	75	25.0
Tehama and Red Bluff	1 50	1 20	20.0
Tehama and Hooker	3 00	2 25	25.0
Tehama and Buckeye	4 00	2 75	31.3
Tehama and Cottonwood	4 00	2 95	26.3
Tehama and Anderson	5 00	3 60	28.0
Tehama and Clear Creek	6 00	4 20	30.0
Tehama and Redding	6 50	4 70	27.7
Red Bluff and Hooker	1 50	1 05	30.0
Red Bluff and Buckeye	2 50	1 55	38.0
Red Bluff and Cottonwood	2 50	1 75	30.0
Red Bluff and Anderson	3 50	2 40	31.4
Red Bluff and Clear Creek	4 50	3 00	33.3
Red Bluff and Redding	5 00	3 50	30.0
Cottonwood and Anderson	1 00	65	35.0
Cottonwood and Clear Creek	2 00	1 25	37.5
Cottonwood and Redding	2 50	1 75	30.0
Anderson and Clear Creek	1 00	65	35.0
Anderson and Redding	1 50	1 10	26.7
American River Bridge and Whitneys	2 50	2 10	16.0
American River Bridge and Lincoln	3 00	2 50	16.7
American River Bridge and Ewings	3 50	2 90	17.1
American River Bridge and Sheridan	4 00	3 25	18.8
American River Bridge and Wheatland	4 50	3 60	20.0
American River Bridge and Reeds	5 00	3 80	24.0
American River Bridge and Yuba	5 00	3 90	22.0
American River Bridge and Marysville	5 00	4 00	20.0
American River Bridge and Lomo	6 00	4 70	21.7
American River Bridge and Live Oak	6 50	5 10	21.5
American River Bridge and Gridley	7 50	5 75	23.3
American River Bridge and Biggs	8 00	6 10	23.8
American River Bridge and Silsby	9 00	6 70	25.6
American River Bridge and Nelson	9 00	7 10	21.1
American River Bridge and Durham	10 00	7 75	22.5
American River Bridge and Chico	11 00	8 35	24.1
American River Bridge and Shaws	11 50	8 85	23.0
American River Bridge and Nord	12 00	9 05	24.6
American River Bridge and Anita	12 00	9 30	22.5
American River Bridge and Cana	12 50	9 55	23.6
American River Bridge and Soto	12 50	9 80	21.6
American River Bridge and Vina	13 00	10 25	21.2
American River Bridge and Sesma	14 00	11 00	21.4

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
American River Bridge and Tehama	$14 00	$11 05	21.1
American River Bridge and Taylor	14 30	11 30	21.0
American River Bridge and Oat Creek	14 60	11 50	21.2
American River Bridge and Rawson	15 00	11 80	21.3
American River Bridge and Red Bluff	15 50	12 25	21.0
American River Bridge and Hooker	17 00	13 30	21.8
American River Bridge and Buckeye	18 00	13 80	23.3
American River Bridge and Cottonwood	18 00	14 00	22.2
American River Bridge and Anderson	19 00	14 65	22.9
American River Bridge and Clear Creek	20 00	15 25	23.8
American River Bridge and Redding	20 50	15 75	23.2
Arcade and Whitneys	2 00	1 65	17.5
Arcade and Lincoln	2 50	2 05	18.0
Arcade and Ewings	3 00	2 45	18.3
Arcade and Sheridan	3 50	2 80	20.0
Arcade and Wheatland	4 00	3 15	21.3
Arcade and Reeds	4 50	3 75	16.7
Arcade and Yuba	5 00	3 90	22.0
Arcade and Marysville	5 00	4 00	20.0
Arcade and Lomo	6 00	4 70	21.7
Arcade and Live Oak	6 50	5 10	21.5
Arcade and Gridley	7 50	5 75	23.3
Arcade and Biggs	8 00	6 10	23.8
Arcade and Silsby	9 00	6 70	25.6
Arcade and Nelson	9 00	7 10	21.1
Arcade and Durham	10 00	7 75	22.5
Arcade and Chico	11 00	8 35	24.1
Arcade and Shaws	11 50	8 85	22.2
Arcade and Nord	12 00	9 05	24.6
Arcade and Anita	12 00	9 30	22.5
Arcade and Cana	12 50	9 55	23.6
Arcade and Soto	12 50	9 80	21.6
Arcade and Vina	13 00	10 25	21.2
Arcade and Sesma	14 00	11 00	21.4
Arcade and Tehama	14 00	11 05	21.1
Arcade and Tyler	14 30	11 30	21.0
Arcade and Oat Creek	14 60	11 50	21.2
Arcade and Rawson	15 00	11 80	21.3
Arcade and Red Bluff	15 50	12 25	21.0
Arcade and Hooker	17 00	13 30	21.8
Arcade and Buckeye	18 00	13 80	23.3
Arcade and Cottonwood	18 00	14 00	22.2
Arcade and Anderson	19 00	14 65	22.9
Arcade and Clear Creek	20 00	15 25	23.8
Arcade and Redding	20 50	15 75	23.2
Whitneys and Ewings	1 00	85	15.0
Whitneys and Sheridan	1 50	1 20	20.0
Whitneys and Wheatland	2 00	1 55	22.5
Whitneys and Reeds	3 00	2 15	28.3
Whitneys and Yuba	3 50	2 65	24.3
Whitneys and Marysville	4 00	2 80	30.0
Whitneys and Lomo	5 00	3 50	30.0
Whitneys and Live Oak	5 50	3 90	29.1
Whitneys and Gridley	6 50	4 55	30.0
Whitneys and Biggs	7 00	4 90	30.0
Whitneys and Silsby	8 00	5 50	31.3
Whitneys and Nelson	8 00	5 90	26.3
Whitneys and Durham	9 00	6 55	27.2
Whitneys and Chico	10 00	7 15	28.5
Whitneys and Shaws	10 50	7 65	27.1
Whitneys and Nord	11 00	7 85	28.6
Whitneys and Anita	11 00	8 10	26 4
Whitneys and Cana	11 50	8 35	27.4
Whitneys and Soto	11 50	8 60	25.2
Whitneys and Vina	12 00	9 05	24.6
Whitneys and Sesma	13 00	9 80	24.6

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Whitneys and Tehama	$13 00	$9 85	24.2
Whitneys and Tyler	13 30	10 10	24.1
Whitneys and Oat Creek	13 60	10 30	24.3
Whitneys and Rawson	14 00	10 60	24.3
Whitneys and Red Bluff	14 50	11 05	23.8
Whitneys and Hooker	16 00	12 10	24.4
Whitneys and Buckeye	17 00	12 60	25.9
Whitneys and Cottonwood	17 00	12 80	24.7
Whitneys and Anderson	18 00	13 45	25.3
Whitneys and Clear Creek	19 00	14 05	26.1
Whitneys and Redding	19 50	14 55	25.4
Ewings and Wheatland	1 00	70	30.0
Ewings and Reeds	2 00	1 30	35.0
Ewings and Yuba	2 50	1 80	28.0
Ewings and Marysville	3 00	1 95	25.0
Ewings and Lomo	4 00	2 65	33.8
Ewings and Live Oak	4 50	3 05	32.2
Ewings and Gridley	5 50	3 70	32.7
Ewings and Biggs	6 00	4 05	32.5
Ewings and Silsby	7 00	4 65	33.6
Ewings and Nelson	7 00	5 05	27.9
Ewings and Durham	8 00	5 70	28.8
Ewings and Chico	9 00	6 30	30.0
Ewings and Shaws	9 50	6 80	28.4
Ewings and Nord	10 00	7 00	30.0
Ewings and Anita	10 00	7 25	27.5
Ewings and Cana	10 50	7 50	28.6
Ewings and Soto	10 50	7 75	26.2
Ewings and Vina	11 00	8 20	25.5
Ewings and Sesma	12 00	8 95	25.4
Ewings and Tehama	12 00	9 00	25.0
Ewings and Tyler	12 30	9 25	24.8
Ewings and Oat Creek	12 60	9 45	25.0
Ewings and Rawson	13 00	9 75	25.0
Ewings and Red Bluff	13 50	10 20	24.4
Ewings and Hooker	15 00	11 25	25.0
Ewings and Buckeye	16 00	11 75	26.6
Ewings and Cottonwood	16 00	11 95	25.3
Ewings and Anderson	17 00	12 60	25.9
Ewings and Clear Creek	18 00	13 20	26.7
Ewings and Redding	18 50	13 70	25.9
Reeds and Marysville	1 00	65	35.0
Reeds and Lomo	2 00	1 35	32.5
Reeds and Live Oak	2 50	1 75	30.0
Reeds and Gridley	3 50	2 49	31.4
Reeds and Biggs	4 00	2 75	31.3
Reeds and Silsby	5 00	3 35	33.0
Reeds and Nelson	5 00	3 75	25.0
Reeds and Durham	6 00	4 40	26.7
Reeds and Chico	7 00	5 00	28.6
Reeds and Shaws	7 50	5 50	26.7
Reeds and Nord	8 00	5 70	28.8
Reeds and Anita	8 00	5 95	25.6
Reeds and Cana	8 50	6 20	27.1
Reeds and Soto	8 50	6 45	24.1
Reeds and Vina	9 00	6 90	23.3
Reeds and Sesma	10 00	7 65	23.5
Reeds and Tehama	10 00	7 70	23.0
Reeds and Tyler	10 30	7 95	22.8
Reeds and Oat Creek	10 60	8 15	23.1
Reeds and Rawson	11 00	8 45	23.2
Reeds and Red Bluff	11 50	8 90	22.6
Reeds and Hooker	13 00	9 95	23.5
Reeds and Buckeye	14 00	10 45	25.4
Reeds and Cottonwood	14 00	10 65	23.9
Reeds and Anderson	15 00	11 30	24.7

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Reeds and Clear Creek	$16 00	$11 90	25.6
Reeds and Redding	16 50	12 40	24.8
Yuba and Lomo	1 50	85	43.3
Yuba and Live Oak	2 00	1 25	37.5
Yuba and Gridley	3 00	1 90	36.7
Yuba and Biggs	3 50	2 25	35.7
Yuba and Silsby	4 50	2 85	36.7
Yuba and Nelson	4 50	3 25	27.8
Yuba and Durham	5 50	3 90	29.0
Yuba and Chico	6 50	4 50	30.8
Yuba and Shaws	7 00	5 00	28.6
Yuba and Nord	7 50	5 20	30.7
Yuba and Anita	7 50	5 45	27.3
Yuba and Cana	8 00	5 70	28.8
Yuba and Soto	8 00	5 95	25.6
Yuba and Vina	8 50	6 40	24.7
Yuba and Sesma	9 50	7 15	24.7
Yuba and Tehama	9 50	7 20	24.2
Yuba and Tyler	9 80	7 45	24.0
Yuba and Oat Creek	10 10	7 65	24.3
Yuba and Rawson	10 50	7 95	24.3
Yuba and Red Bluff	11 00	8 40	23.6
Yuba and Hooker	12 50	9 45	24.4
Yuba and Buckeye	13 50	9 95	26.3
Yuba and Cottonwood	13 50	10 15	24.8
Yuba and Anderson	14 50	10 80	25.5
Yuba and Clear Creek	15 50	11 40	26.5
Yuba and Redding	16 00	11 90	25.6
Lomo and Gridley	1 50	1 05	30.0
Lomo and Biggs	2 00	1 40	30.0
Lomo and Silsby	3 00	2 00	33.3
Lomo and Nelson	3 50	2 40	31.4
Lomo and Durham	4 00	3 05	23.8
Lomo and Chico	5 00	3 65	27.0
Lomo and Shaws	5 50	4 15	24.5
Lomo and Nord	6 00	4 35	27.5
Lomo and Anita	6 00	4 60	23.3
Lomo and Cana	6 50	4 85	25.4
Lomo and Soto	6 50	5 10	21.5
Lomo and Vina	7 00	5 55	20.7
Lomo and Sesma	8 00	6 30	21.3
Lomo and Tehama	8 00	6 35	20.6
Lomo and Tyler	8 30	6 60	20.5
Lomo and Oat Creek	8 60	6 80	20.9
Lomo and Rawson	9 00	7 10	21.1
Lomo and Red Bluff	9 50	7 55	20.5
Lomo and Hooker	11 00	8 60	21.8
Lomo and Buckeye	12 00	9 10	24.2
Lomo and Cottonwood	12 00	9 30	22.5
Lomo and Anderson	13 00	9 95	23.5
Lomo and Clear Creek	14 00	10 55	24.6
Lomo and Redding	14 50	11 05	23.8
Silsby and Nelson	1 00	50	50.0
Silsby and Durham	2 00	1 05	47.5
Silsby and Chico	3 00	1 65	45.0
Silsby and Shaws	3 50	2 15	38.6
Silsby and Nord	4 00	2 35	41.3
Silsby and Anita	4 00	2 60	35.0
Silsby and Cana	4 50	2 85	36.7
Silsby and Soto	4 50	3 10	31.1
Silsby and Vina	5 00	3 55	29.0
Silsby and Sesma	6 00	4 30	28.3
Silsby and Tehama	6 00	4 35	27.5
Silsby and Tyler	6 30	4 60	27.0
Silsby and Oat Creek	6 60	4 80	27.3
Silsby and Rawson	7 00	5 10	27.1

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Silsby and Red Bluff	$7 50	$5 55	26.0
Silsby and Hooker	9 00	6 60	26.7
Silsby and Buckeye	10 00	7 10	29.0
Silsby and Cottonwood	10 00	7 30	27.0
Silsby and Anderson	11 00	7 95	27.7
Silsby and Clear Creek	12 00	8 55	28.8
Silsby and Redding	12 50	9 05	27.6
Shaws and Anita	1 00	50	50.0
Shaws and Cana	1 50	70	53.3
Shaws and Soto	1 50	95	36.7
Shaws and Vina	2 00	1 40	30.0
Shaws and Sesma	3 00	2 15	28.3
Shaws and Tehama	3 00	2 20	26.7
Shaws and Tyler	3 30	2 45	25.8
Shaws and Oat Creek	3 60	2 65	26.4
Shaws and Rawson	4 00	2 95	26.3
Shaws and Red Bluff	4 50	3 40	24.4
Shaws and Hooker	6 00	4 45	25.8
Shaws and Buckeye	7 00	4 95	29.3
Shaws and Cottonwood	7 00	5 15	26.4
Shaws and Anderson	8 00	5 80	27.5
Shaws and Clear Creek	9 00	6 40	28.9
Shaws and Redding	9 50	6 90	27.4
Anita and Vina	1 00	95	5.0
Anita and Sesma	2 00	1 70	15.0
Anita and Tehama	2 00	1 75	12.5
Anita and Tyler	2 30	2 00	13.0
Anita and Oat Creek	2 60	2 20	15.4
Anita and Rawson	3 00	2 50	16.7
Anita and Red Bluff	3 50	2 95	15.7
Anita and Hooker	5 00	4 00	20.0
Anita and Buckeye	6 00	4 50	25.0
Anita and Cottonwood	6 00	4 70	21.7
Anita and Anderson	7 00	5 35	23.6
Anita and Clear Creek	8 00	5 95	25.6
Anita and Redding	8 50	6 45	24.1
Soto and Sesma	1 50	1 20	20.1
Soto and Tehama	1 50	1 25	16.7
Soto and Tyler	1 80	1 50	16.7
Soto and Oat Creek	2 10	1 70	19.0
Soto and Rawson	2 50	2 00	20.0
Soto and Red Bluff	3 00	2 45	18.3
Soto and Hooker	4 50	3 50	22.2
Soto and Buckeye	5 50	4 00	27.3
Soto and Cottonwood	5 50	4 20	23.6
Soto and Anderson	6 50	4 85	25.4
Soto and Clear Creek	7 50	5 45	27.3
Soto and Redding	8 00	5 95	25.6
Sesma and Oat Creek	80	55	31.2
Sesma and Rawson	1 00	85	15.0
Sesma and Red Bluff	1 50	1 25	16.7
Sesma and Hooker	3 00	2 30	23.3
Sesma and Buckeye	4 00	2 80	30.0
Sesma and Cottonwood	4 00	3 00	25.0
Sesma and Anderson	5 00	3 65	27.0
Sesma and Clear Creek	6 00	4 25	29.2
Sesma and Redding	6 50	4 75	27.0
Tyler and Rawson	70	55	21.4
Tyler and Red Bluff	1 20	1 00	16.7
Tyler and Hooker	2 70	2 00	27.0
Tyler and Buckeye	3 70	2 50	32.4
Tyler and Cottonwood	3 70	2 70	27.0
Tyler and Anderson	4 70	3 35	28.7
Tyler and Clear Creek	5 70	3 95	30.7
Tyler and Redding	6 20	4 45	28.2
Oat Creek and Red Bluff	90	75	16.6

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Oat Creek and Hooker	$2 40	$1 80	25.0
Oat Creek and Buckeye	3 40	2 30	32.4
Oat Creek and Cottonwood	3 40	2 50	26.5
Oat Creek and Anderson	4 40	3 15	28.4
Oat Creek and Clear Creek	5 40	3 75	30.6
Oat Creek and Redding	5 90	4 25	28.0
Rawson and Hooker	2 00	1 50	25.0
Rawson and Buckeye	3 00	2 00	33.3
Rawson and Cottonwood	3 00	2 20	26.7
Rawson and Anderson	4 00	2 85	28.8
Rawson and Clear Creek	5 00	3 45	31.0
Rawson and Redding	5 50	3 95	28.2
Hooker and Buckeye	1 00	50	50.0
Hooker and Cottonwood	1 00	70	30.0
Hooker and Anderson	2 00	1 35	32.5
Hooker and Clear Creek	3 00	1 95	35.0
Hooker and Redding	3 50	2 45	30.0
Buckeye and Anderson	1 50	85	43.3
Buckeye and Clear Creek	2 50	1 45	42.0
Buckeye and Redding	3 00	1 95	35.0
Clear Creek and Redding	1 00	50	50.0
San Francisco and Elmira	5 00	4 75	5.0
San Francisco and Curtis	6 80	6 50	4.4
San Francisco and Knights Landing	7 50	6 90	8.0
San Francisco and Yolo	6 70	6 50	3.0
San Francisco and Blacks	7 50	7 10	5.3
San Francisco and Dunnigan	8 60	7 85	8.7
San Francisco and Harrington	9 30	8 35	10.2
San Francisco and Arbuckle	10 00	8 85	11.5
San Francisco and Berlin	10 60	9 25	12.7
San Francisco and Macy	10 80	9 35	13.4
San Francisco and Williams	11 50	9 90	13.9
San Francisco and Maxwell	12 80	10 80	15.6
San Francisco and Delavan	13 60	11 35	16.5
San Francisco and Norman	14 20	11 70	17.6
San Francisco and Logandale	14 50	11 95	17.6
San Francisco and Willows	15 30	12 50	18.3
San Francisco and Germantown	16 30	13 20	19.0
San Francisco and Orland	17 40	14 05	19.3
Oakland, Stock Yards, Stege, San Pablo, Pinole	Same as San Francisco.		
Tormey and Elmira	4 80	3 55	26.0
Tormey and Batavia	5 00	4 00	20.0
Tormey and Dixon	5 00	4 35	13.0
Tormey and Tremont	5 00	4 80	4.0
Tormey and Curtis	6 80	6 50	4.4
Tormey and Knights Landing	7 50	6 90	8.0
Tormey and Yolo	6 70	6 50	3.0
Tormey and Blacks	7 50	7 10	5.3
Tormey and Dunnigan	8 60	7 85	8.7
Tormey and Harrington	9 30	8 35	10.2
Tormey and Arbuckle	10 00	8 85	11.5
Tormey and Berlin	10 60	9 25	12.7
Tormey and Macy	10 80	9 35	13.4
Tormey and Williams	11 50	9 90	13.9
Tormey and Maxwell	12 80	10 80	15.6
Tormey and Delavan	13 60	11 35	16.5
Tormey and Norman	14 20	11 70	17.6
Tormey and Logandale	14 50	11 95	17.6
Tormey and Willows	15 30	12 50	18.3
Tormey and Germantowu	16 30	13 20	19.0
Tormey and Orland	17 40	14 05	19.3
Vallejo Junction and Elmira	4 50	3 25	27.8

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Vallejo Junction and Batavia	$5 00	$3 70	26.0
Vallejo Junction and Dixon	5 00	4 05	19.0
Vallejo Junction and Tremont	5 00	4 50	10.0
Vallejo Junction and Davis	5 00	4 75	5.0
Vallejo Junction and Merritts	5 50	5 25	4.5
Vallejo Junction and Woodland	6 00	5 75	4.2
Vallejo Junction and Curtis	6 80	6 25	8.1
Vallejo Junction and Knights Landing	7 50	6 65	11.3
Vallejo Junction and Yolo	6 70	6 25	6.7
Vallejo Junction and Blacks	7 50	6 85	8.7
Vallejo Junction and Dunnigan	8 60	7 60	11.6
Vallejo Junction and Harrington	9 30	8 10	12.9
Vallejo Junction and Arbuckle	10 00	8 60	14.0
Vallejo Junction and Berlin	10 60	9 00	15.1
Vallejo Junction and Macy	10 80	9 10	15.7
Vallejo Junction and Williams	11 50	9 65	16.1
Vallejo Junction and Maxwell	12 80	10 55	17.5
Vallejo Junction and Delavan	13 60	11 10	18.4
Vallejo Junction and Norman	14 20	11 45	19.4
Vallejo Junction and Logandale	14 50	11 70	19.3
Vallejo Junction and Willows	15 30	12 25	19.9
Vallejo Junction and Germantown	16 30	12 95	20.6
Vallejo Junction and Orland	17 40	13 80	19.5
Valona—Same as Vallejo Junction.			
Port Costa and Elmira	4 30	3 05	29.1
Port Costa and Batavia	4 80	3 50	27.1
Port Costa and Dickson	5 00	3 85	23.0
Port Costa and Tremont	5 00	4 30	14.0
Port Costa and Davis	5 00	4 45	11.0
Port Costa and Webster	5 00	4 95	1.0
Port Costa and Merritts	5 50	4 95	10.0
Port Costa and Woodland	6 00	5 45	9.2
Port Costa and Curtis	6 80	5 95	12.5
Port Costa and Knights Landing	7 50	6 35	15.3
Port Costa and Yolo	6 70	5 95	11.2
Port Costa and Blacks	7 50	6 55	12.7
Port Costa and Dunnigan	8 60	7 30	15.1
Port Costa and Harrington	9 30	7 80	16.1
Port Costa and Arbuckle	10 00	8 30	17.0
Port Costa and Berlin	10 60	8 70	17.9
Port Costa and Macy	10 80	8 80	18.5
Port Costa and Williams	11 50	9 35	18.7
Port Costa and Maxwell	12 80	10 25	19.9
Port Costa and Delavan	13 60	10 80	20.6
Port Costa and Norman	14 20	11 15	21.5
Port Costa and Logandale	14 50	11 40	21.4
Port Costa and Willows	15 30	11 95	21.9
Port Costa and Germantown	16 30	12 65	22.4
Port Costa and Orland	17 40	13 50	22.4
Benicia and Goodyears	1 00	60	40.0
Benicia and Teal	1 80	1 10	38.9
Benicia and Suisun	2 00	1 65	17.5
Benicia and Cannon	3 00	2 35	21.7
Benicia and Elmira	4 00	2 75	31.3
Benicia and Batavia	4 50	3 20	28.9
Benicia and Dixon	5 00	3 55	29.0
Benicia and Tremont	5 00	4 00	20.0
Benicia and Davis	5 00	4 35	13.0
Benicia and Webster	5 00	4 85	3.0
Benicia and Merrills	5 50	4 85	11.8
Benicia and Woodland	6 00	5 35	10.8
Benicia and Curtis	6 80	5 85	14.0
Benicia and Knights Landing	7 50	6 25	16.7
Benicia and Yolo	6 70	5 85	12.7
Benicia and Blacks	7 50	6 45	14.0
Benicia and Dunnigan	8 60	7 20	16.3

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Benicia and Harrington	$9 30	$7 70	17.2
Benicia and Arbuckle	10 00	8 20	18.0
Benicia and Berlin	10 60	8 60	18.9
Benicia and Macy	10 80	8 70	19.4
Benicia and Williams	11 50	9 25	19.6
Benicia and Maxwell	12 80	10 15	20.7
Benicia and Delavan	13 60	10 70	21.3
Benicia and Norman	14 20	11 05	22.2
Benicia and Logandale	14 50	11 30	22.1
Benicia and Willows	15 30	11 85	22.5
Benicia and Germantown	16 30	12 55	23.0
Benicia and Orland	17 40	13 40	23.0
Goodyears and Teal	80	50	37.5
Goodyears and Suisun	1 50	1 05	30.0
Goodyears and Cannon	2 30	1 75	23.9
Goodyears and Elmira	3 00	2 15	28.3
Goodyears and Batavia	3 50	2 60	25.7
Goodyears and Dixon	4 00	2 95	26.3
Goodyears and Tremont	4 50	3 40	24.4
Goodyears and Davis	5 00	3 75	25.0
Goodyears and Webster	5 00	4 25	15.0
Goodyears and Merrills	5 50	4 25	22.4
Goodyears and Woodland	6 00	4 75	20.8
Goodyears and Curtis	6 80	5 25	22.8
Goodyears and Knights Landing	7 50	5 65	24.7
Goodyears and Yolo	6 70	5 25	21.6
Goodyears and Blacks	7 50	5 85	22.0
Goodyears and Dunnigan	8 60	6 60	23.3
Goodyears and Harrington	9 30	7 10	23.7
Goodyears and Arbuckle	10 00	7 60	24.0
Goodyears and Berlin	10 60	8 00	24.5
Goodyears and Macy	10 80	8 10	25.0
Goodyears and Williams	11 50	8 65	24.8
Goodyears and Maxwell	12 80	9 55	25.4
Goodyears and Delavan	13 60	10 10	25.7
Goodyears and Norman	14 20	10 45	25.0
Goodyears and Logandale	14 50	10 70	26.2
Goodyears and Willows	15 30	11 25	26.5
Goodyears and Germantown	16 30	11 95	26.7
Goodyears and Orland	17 40	12 80	26.4
Teal and Suisun	70	55	21.4
Teal and Cannon	1 50	1 25	16.7
Teal and Elmira	2 20	1 65	25.0
Teal and Batavia	2 70	2 10	22.2
Teal and Dixon	3 20	2 45	23.4
Teal and Tremont	3 70	2 90	21.7
Teal and Davis	4 20	3 25	22.6
Teal and Webster	4 70	3 75	20.2
Teal and Sacramento	5 00	4 55	9.0
Teal and Merritts	4 70	3 75	20.2
Teal and Woodland	5 20	4 25	18.3
Teal and Curtis	6 00	4 75	20.8
Teal and Knights Landing	6 70	5 15	23.1
Teal and Yolo	5 90	4 75	19.5
Teal and Blacks	6 70	5 35	20.1
Teal and Dunnigan	7 80	6 10	21.8
Teal and Harrington	8 50	6 60	22.4
Teal and Arbuckle	9 20	7 10	22.8
Teal and Berlin	9 80	7 50	23.5
Teal and Macy	10 00	7 60	24.0
Teal and Williams	10 70	8 15	23.8
Teal and Maxwell	12 00	9 05	24.6
Teal and Delavan	12 80	9 60	25.0
Teal and Norman	13 40	9 95	25.7
Teal and Logandale	13 70	10 20	25.5
Teal and Willows	14 50	10 75	25.9

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Teal and Germantown	$15 50	$11 45	26.1
Teal and Orland	16 60	12 30	25.9
Suisun and Cannon	80	70	12.5
Suisun and Elmira	1 50	1 10	26.7
Suisun and Batavia	2 00	1 55	22.5
Suisun and Dixon	2 50	1 90	24.0
Suisun and Tremont	3 00	2 35	21.7
Suisun and Davis	3 50	2 70	22.9
Suisun and Webster	4 00	3 20	20.0
Suisun and Sacramento	5 00	4 00	20.0
Suisun and Merritts	4 00	3 20	20.0
Suisun and Woodland	4 50	3 70	17.8
Suisun and Curtis	5 30	4 20	20.8
Suisun and Knights Landing	6 00	4 60	23.3
Suisun and Yolo	5 20	4 20	19.2
Suisun and Blacks	6 00	4 80	20.0
Suisun and Dunnigan	7 10	5 55	21.8
Suisun and Harrington	7 80	6 05	22.4
Suisun and Arbuckle	8 50	6 55	22.9
Suisun and Berlin	9 10	6 95	23.6
Suisun and Macy	9 30	7 05	24.2
Suisun and Williams	10 00	7 60	24.0
Suisun and Maxwell	11 30	8 50	24.8
Suisun and Delavan	12 10	9 05	25.2
Suisun and Norman	12 70	9 40	26.0
Suisun and Logandale	13 00	9 65	25.8
Suisun and Willows	13 80	10 20	26.1
Suisun and Germantown	14 80	10 90	26.4
Suisun and Orland	15 90	11 75	26.1
Cannon and Elmira	80	50	37.5
Cannon and Batavia	1 50	90	40.0
Cannon and Dixon	2 00	1 25	37.5
Cannon and Tremont	2 50	1 70	32.0
Cannon and Davis	3 00	2 05	31.7
Cannon and Webster	3 50	2 55	27.1
Cannon and Sacramento	4 50	3 35	25.6
Cannon and Merritts	3 50	2 55	27.1
Cannon and Woodland	4 00	3 05	23.8
Cannon and Curtis	4 80	3 55	26.0
Cannon and Knights Landing	5 50	3 95	28.2
Cannon and Yolo	4 70	3 55	24.5
Cannon and Blacks	5 50	4 15	24.5
Cannon and Dunnigan	6 60	4 90	25.8
Cannon and Harrington	7 30	5 40	26.0
Cannon and Arbuckle	8 00	5 90	26.3
Cannon and Berlin	8 60	6 30	26.7
Cannon and Macy	8 80	6 40	27.3
Cannon and Williams	9 50	6 95	26.8
Cannon and Maxwell	10 80	7 85	27.3
Cannon and Delavan	11 60	8 40	27.6
Cannon and Norman	12 20	8 75	28.3
Cannon and Logandale	12 50	9 00	28.0
Cannon and Willows	13 30	9 55	28.2
Cannon and Germantown	14 30	10 25	28.3
Cannon and Orland	15 40	11 10	27.9
Elmira and Dixon	1 00	85	15.0
Elmira and Tremont	1 50	1 30	13.3
Elmira and Davis	2 00	1 65	17.5
Elmira and Webster	2 50	2 15	14.0
Elmira and Sacramento	3 50	2 95	15.7
Elmira and Merritts	2 50	2 15	14.0
Elmira and Woodland	3 00	2 65	11.7
Elmira and Curtis	3 80	3 15	17.1
Elmira and Knights Landing	4 50	3 55	21.1
Elmira and Yolo	3 70	3 15	14.9

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Elmira and Blacks	$4 50	$3 75	16.7
Elmira and Dunnigan	5 60	4 50	19.5
Elmira and Harrington	6 30	5 00	20.6
Elmira and Arbuckle	7 00	5 50	21.4
Elmira and Berlin	7 60	5 90	22.4
Elmira and Macy	7 80	6 00	23.1
Elmira and Williams	8 50	6 55	22.9
Elmira and Maxwell	9 80	7 45	24.0
Elmira and Delavan	10 60	8 00	24.5
Elmira and Norman	11 20	8 35	24.4
Elmira and Logandale	11 50	8 60	25.2
Elmira and Willows	12 30	9 15	25.6
Elmira and Germantown	13 30	9 85	25.9
Elmira and Orland	14 40	10 70	25.7
Batavia and Tremont	1 00	80	20.0
Batavia and Davis	1 50	1 15	23.3
Batavia and Webster	2 00	1 65	17.5
Batavia and Sacramento	3 00	2 45	18.3
Batavia and Merritts	2 00	1 65	17.5
Batavia and Woodland	2 50	2 15	14.0
Batavia and Curtis	3 30	2 65	20.0
Batavia and Knights Landing	4 00	3 05	23.8
Batavia and Yolo	3 20	2 65	17.2
Batavia and Blacks	4 00	3 25	18.8
Batavia and Dunnigan	5 10	4 00	21.6
Batavia and Harrington	5 80	4 50	22.4
Batavia and Arbuckle	6 50	5 00	23.1
Batavia and Berlin	7 10	5 40	24.0
Batavia and Macy	7 30	5 50	24.7
Batavia and Williams	8 00	6 05	24.4
Batavia and Maxwell	9 30	6 95	25.3
Batavia and Delavan	10 10	7 50	25.7
Batavia and Norman	10 70	7 85	26.6
Batavia and Logandale	11 00	8 10	26.4
Batavia and Willows	11 80	8 65	26.7
Batavia and Germantown	12 80	9 35	27.0
Batavia and Orland	13 90	11 20	20.0
Dixon and Davis	1 00	80	20.0
Dixon and Webster	1 50	1 30	13.3
Dixon and Sacramento	2 50	2 10	16.0
Dixon and Merritts	1 50	1 30	13.3
Dixon and Woodland	2 00	1 80	10.0
Dixon and Curtis	2 80	2 30	18.0
Dixon and Knights Landing	3 50	2 70	22.9
Dixon and Yolo	2 70	2 30	14.8
Dixon and Blacks	3 50	2 90	17.1
Dixon and Dunnigan	4 60	3 65	20.7
Dixon and Harrington	5 30	4 15	21.7
Dixon and Arbuckle	6 00	4 65	22.5
Dixon and Berlin	6 60	5 05	23.5
Dixon and Macy	6 80	5 15	24.3
Dixon and Williams	7 50	5 70	24.0
Dixon and Maxwell	8 80	6 60	25.0
Dixon and Delavan	9 60	7 15	25.5
Dixon and Norman	10 20	7 50	26.5
Dixon and Logandale	10 50	7 75	26.2
Dixon and Willows	11 30	8 30	26.4
Dixon and Germantown	12 30	9 00	27.6
Dixon and Orland	13 40	9 85	26.5
Tremont and Webster	1 00	85	15.0
Tremont and Sacramento	2 00	1 70	15.0
Tremont and Curtis	2 30	2 00	13.0
Tremont and Knights Landing	3 00	2 40	20.0
Tremont and Yolo	2 20	2 00	9.1
Tremont and Blacks	3 00	2 60	13.3
Tremont and Dunnigan	4 10	3 35	18.3

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Tremont and Harrington	$4 80	$3 85	20.0
Tremont and Arbuckle	5 50	4 35	21.0
Tremont and Berlin	6 10	4 75	22.1
Tremont and Macy	6 30	4 85	23.0
Tremont and Williams	7 00	5 40	22.9
Tremont and Maxwell	8 30	6 30	24.1
Tremont and Delavan	9 10	6 85	24.7
Tremont and Norman	9 70	7 20	25.8
Tremont and Logandale	10 00	7 45	25.5
Tremont and Willows	10 80	8 00	26.0
Tremont and Germantown	11 80	8 70	26.3
Tremont and Orland	12 90	9 55	26.0
Davis and Sacramento	1 50	1 30	13.3
Davis and Curtis	1 80	1 50	16.7
Davis and Knights Landing	2 50	1 90	25.0
Davis and Yolo	1 70	1 50	11.8
Davis and Blacks	2 50	2 10	16.0
Davis and Dunnigan	3 60	2 85	20.8
Davis and Harrington	4 30	3 35	22.1
Davis and Arbuckle	5 00	3 85	23.0
Davis and Berlin	5 60	4 25	24.1
Davis and Macy	5 80	4 35	25.0
Davis and Williams	6 50	4 90	24.6
Davis and Maxwell	7 80	5 80	25.6
Davis and Delavan	8 60	6 35	26.2
Davis and Norman	9 20	6 70	27.2
Davis and Logandale	9 50	6 95	26.8
Davis and Willows	10 30	7 50	27.2
Davis and Germantown	11 30	8 20	28.3
Davis and Orland	12 40	9 05	27.0
Webster and Sacramento	1 00	85	15.0
Webster and Curtis	2 30	2 00	13.0
Webster and Knights Landing	3 00	2 40	20.0
Webster and Yolo	2 20	2 00	9.1
Webster and Blacks	3 00	2 60	13.3
Webster and Dunnigan	4 10	3 35	18.3
Webster and Harrington	4 80	3 85	20.0
Webster and Arbuckle	5 50	4 35	21.0
Webster and Berlin	6 10	4 75	22.1
Webster and Macy	6 30	4 85	23.0
Webster and Williams	7 00	5 40	22.9
Webster and Maxwell	8 30	6 30	24.1
Webster and Delavan	9 10	6 85	24.7
Webster and Norman	9 70	7 20	25.8
Webster and Logandale	10 00	7 45	25.5
Webster and Willows	10 80	8 00	26.0
Webster and Germantown	11 80	8 70	26.3
Webster and Orland	12 90	9 55	26.0
Sacramento and Merritts	2 00	1 80	10.0
Sacramento and Woodland	2 50	2 30	8.0
Sacramento and Curtis	3 30	2 80	15.1
Sacramento and Knights Landing	4 00	3 20	20.0
Sacramento and Yolo	3 20	2 80	12.5
Sacramento and Blacks	4 00	3 40	15.0
Sacramento and Dunnigan	5 10	4 15	18.0
Sacramento and Harrington	5 80	4 65	20.0
Sacramento and Arbuckle	6 50	5 15	20.8
Sacramento and Berlin	7 10	5 55	21.8
Sacramento and Macy	7 30	5 65	22.6
Sacramento and Williams	8 00	6 20	22.5
Sacramento and Maxwell	9 30	7 10	23.7
Sacramento and Delavan	10 10	7 65	24.3
Sacramento and Norman	10 70	8 00	25.2
Sacramento and Logandale	11 00	8 25	25.0
Sacramento and Willows	11 80	8 80	25.4
Sacramento and Germantown	12 80	9 50	25.8

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Sacramento and Orland	$13 90	$10 25	25.6
Merritts and Woodland	70	50	28.6
Merritts and Curtis	1 50	1 00	33.3
Merritts and Knights Landing	2 20	1 40	36.4
Merritts and Yolo	1 40	1 00	28.6
Merritts and Blacks	2 20	1 60	27.3
Merritts and Dunnigan	3 30	2 35	28.8
Merritts and Harrington	4 00	2 85	28.8
Merritts and Arbuckle	4 70	3 35	28.7
Merritts and Berlin	5 30	3 75	29.2
Merritts and Macy	5 50	3 85	30.0
Merritts and Williams	6 20	4 40	29.0
Merritts and Maxwell	7 50	5 30	30.0
Merritts and Delavan	8 30	5 85	30.0
Merritts and Norman	8 90	6 20	30.3
Merritts and Logandale	9 20	6 45	30.0
Merritts and Williams	10 00	7 00	30.0
Merritts and Germantown	11 00	7 70	30.0
Merritts and Orland	12 10	8 55	29.3
Woodland and Curtis	80	50	37.5
Woodland and Knights Landing	1 50	90	40.0
Woodland and Yolo	70	50	28.6
Woodland and Blacks	1 50	1 10	26.7
Woodland and Dunnigan	2 60	1 85	28.8
Woodland and Harrington	3 30	2 35	28.8
Woodland and Arbuckle	4 00	2 85	28.8
Woodland and Berlin	4 60	3 25	29.6
Woodland and Macy	4 80	3 35	30.2
Woodland and Williams	5 50	3 90	29.2
Woodland and Maxwell	6 80	4 80	29.4
Woodland and Delavan	7 60	5 35	29.6
Woodland and Norman	8 20	5 70	30.5
Woodland and Logandale	8 50	5 95	30.0
Woodland and Willows	9 30	6 50	30.0
Woodland and Germantown	10 30	7 20	30.0
Woodland and Orland	11 40	8 05	30.0
Curtis and Knights Landing	80	50	37.5
Curtis and Yolo	1 50	1 00	33.3
Curtis and Blacks	2 30	1 60	30.4
Curtis and Dunnigan	3 40	2 35	30.9
Curtis and Harrington	4 10	2 85	30.5
Curtis and Arbuckle	4 80	3 35	30.2
Curtis and Berlin	5 40	3 75	30.6
Curtis and Macy	5 60	3 85	31.2
Curtis and Williams	6 30	4 40	30.2
Curtis and Maxwell	7 60	5 30	30.3
Curtis and Delavan	8 40	5 85	30.4
Curtis and Norman	9 00	6 20	31.1
Curtis and Logandale	9 30	6 45	30.6
Curtis and Willows	10 10	7 00	30.7
Curtis and Germantown	11 10	7 70	30.6
Curtis and Orland	12 20	8 55	30.0
Knights Landing and Yolo	2 20	1 40	36.4
Knights Landing and Blacks	3 00	2 00	33.3
Knights Landing and Dunnigan	4 10	2 75	33.0
Knights Landing and Harrington	4 80	3 25	32.3
Knights Landing and Arbuckle	5 50	3 75	31.8
Knights Landing and Berlin	6 10	4 15	32.0
Knights Landing and Macy	6 30	4 25	32.5
Knights Landing and Williams	7 00	4 80	31.4
Knights Landing and Maxwell	8 30	5 70	31.3
Knights Landing and Delavan	9 10	6 25	31.3
Knights Landing and Norman	9 70	6 60	32.0
Knights Landing and Logandale	10 00	6 85	31.5
Knights Landing and Willows	10 80	7 40	31.5
Knights Landing and Germantown	11 80	8 10	31.4

APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Knights Landing and Orland	$12 80	$8 95	30.6
Yolo and Blacks	80	60	25.0
Yolo and Dunnigan	1 90	1 35	29.0
Yolo and Harrington	2 60	1 85	28.8
Yolo and Arbuckle	3 30	2 35	28.8
Yolo and Berlin	3 90	2 75	29.5
Yolo and Macy	4 10	2 85	30.5
Yolo and Williams	4 80	3 40	29.2
Yolo and Maxwell	6 10	4 30	29.5
Yolo and Delavan	6 90	4 85	29.8
Yolo and Norman	7 50	5 20	30.7
Yolo and Logandale	7 80	5 45	30.1
Yolo and Willows	8 60	6 00	30.0
Yolo and Germantown	9 60	6 70	30.2
Yolo and Orland	10 70	7 55	29.4
Blacks and Dunnigan	1 10	75	31.8
Blacks and Harrington	1 80	1 25	30.6
Blacks and Arbuckle	2 50	1 75	30.0
Blacks and Berlin	3 10	2 15	30.6
Blacks and Macy	3 30	2 25	31.8
Blacks and Williams	4 00	2 80	30.0
Blacks and Maxwell	5 30	3 70	30.2
Blacks and Delavan	6 10	4 25	30.3
Blacks and Norman	6 70	4 60	31.3
Blacks and Logandale	7 00	4 85	30.7
Blacks and Willows	7 80	5 40	30.8
Blacks and Germantown	8 80	6 10	30.7
Blacks and Orland	9 90	6 95	30.0
Dunnigan and Harrington	70	50	28.6
Dunnigan and Arbuckle	1 40	1 00	28.5
Dunnigan and Berlin	2 00	1 40	30.0
Dunnigan and Macy	2 20	1 50	31.8
Dunnigan and Williams	2 90	2 05	29.3
Dunnigan and Maxwell	4 20	2 95	30.0
Dunnigan and Delavan	5 00	3 50	30.0
Dunnigan and Norman	5 60	3 85	31.3
Dunnigan and Logandale	5 90	4 10	30.5
Dunnigan and Williams	6 70	4 65	30.6
Dunnigan and Germantown	7 70	5 35	30.5
Dunnigan and Orland	8 80	6 20	30.0
Harrington and Arbuckle	70	50	28.6
Harrington and Berlin	1 30	90	30.8
Harrington and Macy	1 50	1 00	33.3
Harrington and Williams	2 20	1 55	30.0
Harrington and Maxwell	3 50	2 45	30.0
Harrington and Delavan	4 30	3 00	30.2
Harrington and Norman	4 90	3 35	31.6
Harrington and Logandale	5 20	3 60	30.8
Harrington and Willows	6 00	4 15	30.8
Harrington and Germantown	7 00	4 85	30.7
Harrington and Orland	8 10	5 70	30.0
Arbuckle and Berlin	60	50	16.7
Arbuckle and Macy	80	50	37.5
Arbuckle and Williams	1 50	1 05	30.0
Arbuckle and Maxwell	2 80	1 95	30.4
Arbuckle and Delavan	3 60	2 50	30.6
Arbuckle and Norman	4 20	2 85	32.1
Arbuckle and Logandale	4 50	3 10	31.1
Arbuckle and Willows	5 30	3 65	31.1
Arbuckle and Germantown	6 30	4 35	31.0
Arbuckle and Orland	7 40	5 20	29.7
Berlin and Williams	90	65	27.8
Berlin and Maxwell	2 20	1 55	29.6
Berlin and Delavan	3 00	2 10	30.0
Berlin and Norman	3 60	2 45	32.0
Berlin and Logandale	3 90	2 70	30.8

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APPENDIX VIII—Continued.

Between—	Regular Rate Round Trip.	Reduced Round Trip.	Per Cent of Reduction.
Berlin and Willows	$4 70	$3 25	30.8
Berlin and Germantown	5 70	3 95	30.7
Berlin and Orland	6 80	4 80	29.4
Macy and Williams	80	55	31.3
Macy and Maxwell	2 10	1 45	31.0
Macy and Delavan	2 90	2 00	31.0
Macy and Norman	3 50	2 35	32.9
Macy and Logandale	3 80	2 60	31.6
Macy and Willows	4 60	3 15	31.5
Macy and Germantown	5 60	3 85	31.3
Macy and Orland	6 70	4 70	30.0
Williams and Maxwell	1 30	90	30.8
Williams and Delavan	2 10	1 45	31.0
Williams and Norman	2 70	1 80	33.3
Williams and Logandale	3 00	2 05	31.6
Williams and Willows	3 80	2 60	31.6
Williams and Germantown	4 80	3 30	31.2
Williams and Orland	5 90	4 15	30.0
Maxwell and Delavan	80	55	31.2
Maxwell and Norman	1 40	90	35.7
Maxwell and Logandale	1 70	1 15	32.4
Maxwell and Willows	2 50	1 70	32.0
Maxwell and Germantown	3 50	2 40	31.4
Maxwell and Orland	4 60	3 25	30.0
Delavan and Norman	60	50	16.6
Delavan and Logandale	90	60	33.3
Delavan and Willows	1 70	1 15	32.4
Delavan and Germantown	2 70	1 85	31.5
Delavan and Orland	3 80	2 70	29.0
Norman and Willows	1 20	80	33.3
Norman and Germantown	2 20	1 50	31.8
Norman and Orland	3 30	2 35	28.8
Logandale and Willows	80	55	31.3
Logandale and Germantown	1 80	1 25	30.6
Logandale and Orland	2 90	2 10	27.6
Willows and Germantown	1 00	70	30.0
Willows and Orland	2 10	1 55	26.2
Germantown and Orland	1 20	85	29.2

APPENDIX IX.

STATEMENT

Showing grain rates and distance hauled on six of the principal railroads west of Chicago; the average haul and rate on the Central Pacific Railroad and leased lines.

	Average Haul (Miles).	Average Rate per Ton per Mile (Grain).
Chicago and Alton	200	$1 50
Chicago, Milwaukee, and St. Paul	200	2 00
Over	200	1 50
Chicago and Northwestern	225	2 00
Chicago, Burlington, and Quincy	245	1 10
Illinois Central	125	1 75
Chicago, Rock Island, and Pacific	175	1 00
Total	1,370	$11 88
Average	195	$1 69

Wheat, per one hundred pounds ..... 16½ cents.
Wheat, per bushel ..... $9\frac{9}{10}$ cents.
Corn, per bushel ..... $9\frac{24}{100}$ cents.
Central Pacific and leased lines, $2\frac{11.6}{1000}$ on all freight hauled a distance of 200 miles.

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APPENDIX X.

PRODUCE STATISTICS.

The yearly receipts of six leading articles of produce at San Francisco from the agricultural districts, for the years ending June 30th, were as follows:

Year.	Wheat, (Tons).	Barley, (Tons).	Oats, (Tons).	Potatoes, (Tons).	Beans, (Tons).	Hay, (Tons).	Total, (Tons).
1872	*140,583	39,609	17,926	45,000	1,762	38,320	283,200
1873	572,385	49,096	10,027	48,711	2,312	48,600	731,131
1874	461,910	56,369	12,172	48,815	2,785	50,400	623,451
1875	559,664	60,682	15,292	47,018	3,547	54,000	740,203
1876	398,468	57,107	11,698	44,700	3,600	64,175	579,748
1877	619,333	76,188	10,512	50,661	3,667	69,370	829,731
1878	280,145	42,948	7,270	39,022	2,500	67,000	438,885
1879	575,876	87,635	12,690	46,888	6,500	70,000	799,589

NOTE.—This statement does not include grain received at the general markets other than San Francisco, which is not exported.

Of the grain products there were transported to the general markets† of the State by the railroads, from the agricultural districts, as follows:

Years Ending Dec. 31.	Central Pacific Railroad and Operated Roads.			Southern Pacific Railroad, Northern Division—Tons	San Francisco and North Pacific Railroad—Tons	North Pacific Coast Railroad—Tons	Total Grain Received at San Francisco	Total Grain Transported to General Markets by Railroads	Percentage of Tonnage by Railroads‖
	Tons.	Amount Received.	Amount per Ton.						
1872‡	111,316	$357,963 99	$3 21	------	------	------	253,776	111,316	43
1873	122,431	464,210 41	3 79	22,043	------	------	692,690	144,774	20
1874	133,364	431,022 82	3 23	28,220	5,254	------	613,870	166,838	27
1875	103,558	347,041 43	3 35	42,199	6,926	------	711,879	152,683	21
1876	165,507	565,113 83	3 42	21,928	4,389	------	563,185	191,824	34
1877	80,231	280,076 40	3 44	46,212	9,918	914	774,670	137,275	17
1878	311,204	882,040 00	2 83	2,996	3,712	351	493,044	318,363	64
1879 ⁂	120,778	301,900 00	2 50	43,495	3,500	------	760,087	167,773	23
Average by rail									28

NOTE.—Of the grain carried to the general markets by rail, other than San Francisco, one half has been included in the total grain receipts at the latter point, as a basis of estimating the percentage moved by the railroads. A large amount reaches the former markets by water and by teams, which is omitted from the tables.

* Includes flour reduced to wheat.
† Oakland, San José, Stockton, Sacramento, Vallejo, Marysville, Petaluma, Los Angeles, and San Francisco.
‡ Seven months, ending December 31st.
‖ Leaving out fractions.
⁂ Six months.

APPENDIX XI.

COMPARATIVE TABLE OF PASSENGER AND FREIGHT CHARGES.

Name of Road.	Miles of Road.	Passengers Carried One Mile.	Average Rate of Fare per Mile.				Tons of Freight Carried One Mile.	Average Rates of Freight per Ton per Mile.	
			First Class.		Second Class.			Local, (Cents).	Foreign, (Cents).
			Local, (Cents).	Foreign, (Cents).	Local, (Cents).	Foreign, (Cents).			
New York Report, 1876.									
Albany and Susquehanna	142	9,327,741	3.00	2.50	------	1.25	52,168,375	------	------
Atlantic and Great Western	388	36,626,491	3.00	2.00 to 2.75	------	1.50 to 2.50	293,392,975	------	------
Boston and Albany	201	110,644,410	2.55	2.37	------	------	301,624,988	------	------
Erie	460	163,074,795	2.25	1.72	------	------	1,040,431,921	------	------
Harlem Extension	113	2,567,395	4.00	3.00	------	------	4,204,872	------	------
Lake Shore and Michigan Southern	550	167,635,092	2.29 to 2.75	2.07 to 2.60	2.08 to 2.18	1.90 to 2.04	1,064,841,419	------	------
New York and Albany	146	------	------	------	------	------	------	------	------
New York Central and Hudson River	442	353,136,145	2.00 to 2.50	1.50	------	------	1,674,447,055	------	------
Southern Railroad of Rhode Island	52	------	3.00	2.50	------	------	------	------	------
Pennsylvania Report, 1877.									
Atlantic and Great Western	729	33,628,761	3.50	2.00 to 2.75	------	1.50 to 2.50	320,132,236	1½ to 5	1 to 3
Buffalo, New York, and Philadelphia	139	2,764,861	3.50	3.00	------	------	44,031,637	6	0.75
Delaware, Lackawanna, and Western	282	8,722,409	3.50	3.00	2.00	2.00	168,693,921	3.29	2.15
Philadelphia and Reading	1,486	74,315,237	2.17	2.17	2.17	2.17	779,154,130	1.97	1.97
Tioga	67	969,440	3.50	3.00	3.50	3.00	17,451,711	9	7

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APPENDIX XI—Continued.

Name of Road.	Length in Miles.	Passengers Carried One Mile.	Rates of Fare per Mile.			Tons of Freight Carried One Mile.	Rates of Freight per Ton per Mile.		
			Local, (Cents).	Foreign, (Cents).	All, (Cents).		Local, (Cents).	Foreign, (Cents).	All, (Cents).
Michigan Report, 1877.									
Chicago and Lake Huron	232	5,498,533	2.54	2.15	-------	42,181,437	-------	-------	1.00
Chicago and Northwestern	1,616	104,969,106	2.84	2.61	-------	494,140,450	-------	-------	1.75
Detroit and Milwaukee	189	12,565,342	2.90	2.00	-------	36,864,322	2.542	0.587	1.427
Flint and Pere Marquette	280	14,143,710	2.08	-------	-------	27,148,639	2.222	0.44	2.036
Michigan Central	270	64,610,024	2.79	1.92	-------	400,497,547	1.991	0.72	0.904
Michigan Lake Shore	58	904,129	-------	-------	-------	601,130	-------	-------	4.56
Massachusetts Report, 1877.									
Boston and Albany	249	103,278,126	2.49	2.28	2.31	313,822,671	1.96	0.85	1.21
Boston and Lowell	46	24,594,241	2.64	1.87	2.09	15,846,225	5.50	2.50	3.69
Boston and Maine	126	61,779,576	2.63	1.76	2.03	36,036,194	2.58	2.10	2.31
Boston and Providence	62	35,995,043	2.60	2.30	2.20	19,155,837	4.00	1.80	2.70
Cheshire	54	4,038,809	2.90	3.50	3.00	-------	4.26	1.68	1.77
Connecticut River	56	9,777,284	2.92	3.12	2.69	-------	8.80	3.30	4.00
Eastern	118	68,502,002	2.65	1.54	2.06	39,099,659	2.95	1.74	2.48
Fitchburg	93	30,690,340	2.30	2.30	2.00	53,224,939	4.28	1.13	1.71
New York and New England	139	19,652,913	2.50	2.26	2.15	11,321,038	4.20	2.80	3.50
Norwich and Worcester	66	6,789,596	3.40	3.70	3.20	16,428,092	4.00	2.00	3.40
Old Colony	274	59,628,616	2.50	2.10	2.10	21,387,713	4.50	2.20	3.60
Connecticut Report, 1877.									
Boston and New York Air-Line	50	2,426,897	3.65	0.85	2.81	3,052,810	-------	-------	3.68
Connecticut Valley	46	3,508,582	2.54	1.64	2.48	2,177,381	-------	-------	3.80
Hartford, Providence, and Fishkill	123	15,476,226	3.15	0.98	2.67	7,853,814	-------	-------	5.00
New Haven and Northampton	99	4,516,618	3.00	-------	3.00	11,719,984	-------	-------	3.42
New York, New Haven, and Hartford	140	111,641,817	2.71	0.69	2.31	39,646,733	-------	-------	3.50
New York, Providence, and Boston	63	15,378,852	2.65	0.88	2.40	9,222,206	-------	-------	3.39
Shore Line	50	8,213,330	3.01	0.61	2.84	1,265,575	-------	-------	5.20
California Report, 1878.									
Central Pacific	2,119	178,773,325	4.30	3.24	2.95	392,281,711	3.268	1.999	2.753
Southern Pacific (Northern Division)	161	13,805,098	3.84	4.00	3.47	11,495,147	-------	-------	4.086
San Francisco and North Pacific	72	4,742,495	-------	-------	3.91	-------	-------	-------	-------
Central Pacific, 1881	2,767	-------	-------	-------	2.68	-------	-------	-------	3.116

APPENDIX XII.

STATEMENT*

Showing the gradual reduction in freight charges per ton per mile, on several transportation lines engaged in commerce between the Western States and the Atlantic seaboard, from 1868 to 1876, inclusive, from First Annual Report of the Internal Commerce of the United States, by Joseph Nimmo, Jr.

RAILROADS.	YEARS.								
	1868. (Cents.)	1869. (Cents.)	1870. (Cents.)	1871. (Cents.)	1872. (Cents.)	1873. (Cents.)	1874. (Cents.)	1875. (Cents.)	1876. (Cents.)
New York Central	2.59	2.20	1.86	1.65	1.69	1.57	1.47	1.27	1.05
Pennsylvania	1.90	1.72	1.55	1.34	1.42	1.42	1.26	1.06	.89
Erie	1.92	1.60	1.37	1.47	1.52	1.45	1.31	1.21	1.07
New York State Canals	.88	.92	.83	1.02	1.02	.88	.73	.66	.68
Philadelphia and Erie	-------	-------	-------	1.85	1.46	1.36	.94	.87	.77
Lake Shore and Michigan Southern	2.43	2.34	1.50	1.39	1.37	1.33	1.18	1.01	.82
Michigan Central	2.09	1.98	1.61	1.56	1.57	1.30	1.16	1.03	-------
Chicago, Burlington, and Quincy	3.01	2.77	2.31	2.19	2.18	1.92	1.90	1.91	-------
Chicago and Northwestern	3.13	-------	3.09	2.87	2.51	2.35	2.10	1.95	-------
Average	2.26	1.97	1.91	1.74	1.67	1.54	1.36	1.21	-------

* Report of Massachusetts Railroad Commissioners, for 1877, p. 11.

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APPENDIX XIII.

COMPARISONS

The population of the Pacific States and Territories, comprising California, Nevada, Oregon, Washington, Idaho, Utah, and Arizona, was in 1870, as shown by the Federal Census Report, 829,059. Estimating the increase since that date to be thirty per cent, the present population is 1,077,776. For convenience, let it be placed in round numbers at 1,100,000. Estimating the gross earnings of the railroad system of this section of the country at $25,000,000, the amount paid per capita for railroad transportation service would be about $22 73.

In Massachusetts the population is estimated at 1,650,000. The total earnings of her railroad system in the year 1878 was $30,008,513, or $18 18 per capita. In New York the population is estimated to be 4,700,000, and the earnings of her railroads for 1877 were $84,759,329, or $18 03 per capita. This kind of calculation, however, does not correctly represent what is paid to the railroads by our own people, any more than the *$41 per capita for Nebraska, Wyoming, and Utah represents the amount paid by the inhabitants of these latter. The traffic for other districts of country beyond that in which the road is situated constitutes an important factor in the earnings of railroads in the United States and Territories.

The gross earnings of the railway system of Great Britain for the year ending December 31, 1874, were, in our money, $250,355,853. The average earnings per mile of road operated, on a basis of 15,537 miles, as per Captain Tyler's report, in 1871, were $16,120. The amount for each inhabitant was $8 62.

The French railroad system, according to the official report just published, produced the following results in 1878 compared with 1877:

	1878.	1877.	Increase.	Per Cent.
Miles worked December 31	13,786	13,352	434	3.3
Average worked during year	13,498	13,058	440	3.4
Gross receipts	$175,741,733	$164,033,375	$11,708,358	7.1
Receipts per mile	$13,019	$12,562	$456	3.6

France has an area of 204,000 square miles, and has 36,000,000 inhabitants; and the most thickly peopled part of the United States, that east of Indiana and north of the Ohio and the Potomac—New England, the Middle States, Maryland, and Ohio—have 222,000 square miles, and, by the census of 1870, 15,870,000 inhabitants, and now probably 18,500,000, and they now have 25,809 miles of railroad. France, then, has one mile of railroad to 14.8 square miles of territory and 2,620 inhabitants; the eastern United States one mile of road to 8.6 square miles of area and 718 inhabitants. There is nearly twice as much land and nearly four times as

* Poor's Manual.

many people to support a railroad in France as in the most thickly populated portion of the United States of similar area. The average contribution per square mile of area and per inhabitant to the earnings of the French railroads was $861 per square mile ($1 35 per acre) and $4 90 per inhabitant. In the United States territory referred to, the earnings of the roads were $9,128 per mile (and so much larger in the aggregate, from about twice the mileage, than the earnings of the French roads, though nearly a third less per mile); and the average per square mile of area was $1,098 ($1 71 per acre) and $13 17 per inhabitant—the latter nearly three times as much as in France, where there are nearly four times as many people per mile of road. In the United States, however, a very large portion of the earnings of the roads is from traffic coming from beyond this district, which is not the case in France. About one half of the total earnings of the 80,000 miles of railroads of the United States goes to the roads of the States named, having one third of the total mileage.—[*Railroad Gazette.*

The following table is a summary deduced from the preceding statistics:

States.	Population.	Area, (Square Miles).	Railroad Mileage.	Gross Earnings.	Earnings per Mile.	Cost per Capita.
Massachusetts	1,650,000	7,800	3,123	$30,008,514	$9,606	$18 19
New York	4,700,000	47,000	7,479	84,759,330	11,333	18 03
Pennsylvania	3,521,000	46,000	5,868	67,416,452	11,489	19 14
New Jersey	1,064,663	8,320	1,511	25,467,905	16,855	23 92
Ohio	2,868,049	39,964	4,451	38,211,835	8,585	13 32
Pacific States and Territories	1,100,000	743,060	*3,940	*25,000,000	6,370	22 73
England	30,000,000		15,537	250,355,853	16,114	8 34
France	36,000,000	204,000	13,498	175,741,733	13,019	4 90

	Miles Operated.	Gross Income.	Earnings per Mile.	Cost per Capita.
Central Pacific Railroad Company	†1,783	$17,803,755	$9,985	‡$19 54
Union Pacific Railroad Company	1,038	11,993,052	11,554	‖41 00

* Estimated.
† Average for year 1877.
‡ Population of California.
‖ Poor's Manual.

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COMPARATIVE STATEMENT OF EARNINGS PER MILE OF ROAD.

Name of Railroad.	Gross Earnings per Mile.
Boston and Albany Railroad*	$20,134 70
Boston and Lowell Railroad	13,178 78
Boston and Maine Railroad	10,843 66
Boston and Providence Railroad	20,327 08
Eastern Railroad	8,722 10
Fitchburg Railroad	10,027 09
New York and New England Railroad	6,973 23
Old Colony Railroad Company	7,738 97
Average (8 roads)	$11,899 33
Boston, Clinton, Fitchburg, and New Belford Railroad	$6,818 96
Cheshire Railroad	8,085 35
Connecticut River Railroad	8,747 35
New Haven and Northampton Railroad	4,979 89
New York, New Haven, and Hartford Railroad	25,859 52
Norwich and Worcester Railroad	10,792 70
Providence and Worcester Railroad	13,534 34
Springfield, Athol, and Northeastern Railroad	1,973 06
Worcester and Nashua Railroad	5,261 78
Average (9 roads)	$10,747 12
Average (17 roads)	$11,503 48
Central Pacific Railroad Company and leased lines	9,985 00
Central Pacific Railroad Company and leased lines, 1881	8,900 00

* NOTE.—Above Massachusetts returns taken from Ninth Annual Report (for year ending December 31, 1877) of Massachusetts Board of Railroad Commissioners, p. 248.

APPENDIX XIV.

EMPLOYES AND WAGES.

The total number of persons employed by the railroad companies reporting to this office, in the year ending December 31, 1877, was 8,441.

The total number in the year ending December 31, 1878, as per returns (compare Table X, concluded), was 7,778, which shows a reduction of 663.

The wages paid during the year 1878 to the various classes of employés was, by the Central and Southern Pacific Railroads and the system of roads operated by them, as follows:

	Per Month.	Per Year.
Division Superintendents, $225 to $275	$250 00	$3,000 00
Master Mechanics	250 00	3,000 00
Assistant Mechanics	175 00	2,100 00
Mechanics in shops	75 00	900 00
Engineers, $100 to $140	120 00	1,440 00
Firemen, $65 to $75	70 00	840 00
Passenger Conductors, $110 to $115	112 50	1,350 00
Freight Conductors, $85 to $90	87 50	1,050 00
Maggage-masters	75 00	900 00
Brakemen, flagmen, and switchmen, $65 to $70	67 50	810 00
Section men, $20 to $54*	37 50	450 00
Laborers, $52 to $58 50	55 00	660 00
Average pay of employés other than officers	55 96	671 50

The following statement of wages paid employés by the railroad companies of the State of Wisconsin, is taken from the report of the Commissioner of that State for the year 1878:

	Per Month.	Per Year.
Division and Assistant Superintendents	$213 33	$2,560 00
Master Mechanics and Assistants	152 50	1,830 00
Clerks in offices	60 00	720 00
Conductors	74 00	888 00
Engineers	88 60	1,063 00
Brakemen	45 00	540 00
Flagmen, switch tenders, etc.	43 25	519 00
Station agents	58 00	697 00
Section men	30 40	365 00
Other employés	45 50	546 00

* Chinamen, $20 to $28 per month.

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Wages paid employés in foreign countries:

	Per Month.	Per Year.
France—engineers and guards	$61 50	$738 00
Belgium—engineers and guards	34 00	408 00
Germany—engineers and guards	31 00	362 00

Other employés, in the foreign countries named above, below the grades enumerated above, bear relatively about the same proportionate average to the higher grades as in the United States.

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BIENNIAL REPORT

OF THE

BOARD OF STATE HARBOR COMMISSIONERS

FOR THE TWO FISCAL YEARS

Commencing July 1, 1880, and Ending June 30, 1882.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

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REPORT.

Hon. GEORGE C. PERKINS, *Governor of the State of California:*

In compliance with Section 2537 of the Political Code, the Board of State Harbor Commissioners submit their report for the two years commencing July 1, 1880, and ending June 30, 1882.

The details appear in the tabular statements hereto annexed. The following is a summary of them:

RECEIPTS.

From dockage and tolls	$816,913 73
From rents	50,927 50
From dredging for private parties	5,036 00
From sale of old material	1,565 90
Total	$874,443 13

From which it appears that the average monthly receipts from all sources have been $36,435 13.

On December 30, 1879, the tolls were reduced as follows: All the twelve and one half cent rates were reduced to ten cents, and all the six and one quarter cent rates were reduced to five cents. This was applicable to all merchandise; and, in addition, the rate on lumber was reduced from ten cents to five cents per 1,000 feet, on coal from ten cents to five cents per ton, and on wood from twelve and one half cents to five cents per cord. That is, the rates on general merchandise were reduced twenty-five per cent, on lumber and coal fifty per cent, and on wood sixty per cent.

On June 4, 1880, the rules as to dockage on vessels were changed, so that instead of the day of arrival and day of departure being charged for as full days, the day was reckoned from the hour of arrival to the same hour on the succeeding days.

The gross receipts were, of course, decreased to the extent of such reductions.

DISBURSEMENTS.

The various items of expense may be grouped under the following heads:

Salaries of Commissioners, Secretary, Assistant Secretary, Engineer, Assistant Engineer and Draughtsman, Attorney, Wharfingers, Collectors, and Watchmen	$182,734 72
Construction, including building of new wharves, sheds, and sewers	225,825 47
Urgent repairs, including maintenance and repair of the outer half of water front streets and of old wharves	60,250 08
Dredging, including wages of men, repairs of tow-boats, dredgers, and scows, cost of coal and water	100,205 97
Fire account, including wages, cost of repairs of pumps and hose	8,655 99
Wharf cleaning	6,701 43
Seawall construction	475,979 94
Wharf offices, construction, repair, and furniture	2,501 95
General expenses, including office rent, fuel, stationery, printing, legal expenses, damages to vessels and merchandise, notices of removal of vessels, dockage and tolls refunded, and other small items	15,513 13
Total	$1,078,368 68

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Deduct from such total disbursements the following items, which represent fixed capital, viz.:

Construction of new wharves, sheds, etc.	$225,825 47
Construction of seawall	475,979 94
Total	$701,805 41

And the balance of $376,563 27, represents the current expenses of every kind for two years, and shows an average monthly expense of about $15,690 13.

The increase in the current monthly expense is accounted for by the fact that since June, 1880, a number of new wharves have been constructed, thereby increasing the expense for additional Wharfingers and Collectors, and for labor and materials in keeping up necessary repairs.

HARBOR IMPROVEMENT FUND.

Amount to credit, July 1, 1880	$308,710 75
Remitted to State Treasurer from that date to June 30, 1882, inclusive	454,702 31
	$763,413 06
Drawn from the fund from that date to June 30, 1882, inclusive	658,627 86
Amount to credit of fund June 30, 1882, inclusive	$104,785 20
Average monthly remittance	$18,945 93

It will be found that the State Treasurer's statement of the amount to the credit of the fund does not agree with the above figures, because $15,809 66 of the receipts of June, 1882, did not reach him till after the close of his biennial statement, and because drafts to the amount of $22,366 50 drawn by this office prior to June 30, 1882, had not been paid at the Treasurer's office at that date. It is only after the June settlements are made at this office that the balance can be remitted.

The discrepancy of two cents between the Treasurer's account and the account in this office has existed for many years.

CONSTRUCTION ACCOUNT.

This does not include construction of the seawall, and may be classed under three heads:

I. Work contracted for prior to June 30, 1880, and completed prior to June 30, 1882:

Flooring of Shed on Section No. 2 of the Seawall between Montgomery and Kearny Streets, and Extension of Montgomery Street to the Seawall.—Contract made May 25, 1880, for $11,344. It was completed and paid for August 19, 1880. An addition of ten feet to the width was made, at a cost of $1,899 66. Total cost, $13,243 66.

Shed on Section No. 2 of the Seawall between Montgomery and Kearny Streets.—One thousand feet long by one hundred feet wide. Contract made June 5, 1880, for $13,874. It was completed and paid for November 9, 1880. Seventy-five dollars was allowed for extra work, and $103 58 deducted for work not done. Total cost, $13,845 42.

Shed on Spear Street Wharf.—Two hundred and seventy-one feet long by eighty feet wide. Contract made April 17, 1880, for $2,600. Allowed for extra work, $150. It was completed and paid for July 22, 1880. Total cost, $2,750.

Widening New Broadway Wharf.—Five hundred and thirty feet long by thirty feet wide. Contract made June 22, 1880, for $7,500. It was completed and paid for August 12, 1880. There was a deduction of $60. Total cost, $7,440.

Ferry Slip and Approach for South Pacific Coast Railroad Company. Contract made June 22, 1880, for $35,355. It was completed and paid for December 6, 1880. Paid for replanking a part of the old wharf adjacent, $976 75.

II. Work contracted for subsequent to June 30, 1880, and completed prior to June 30, 1882:

Flooring of Shed on Section 1.—Nine hundred and twenty-five feet long by sixty feet wide. Contract made July 12, 1880, for $8,899. Widened ten feet, at a cost of $1,421 74. Completed and paid for October 29, 1880. Total cost, $10,320 74.

Extension of East Street, between Howard and Folsom Streets.—One hundred feet wide and ninety-four feet long; and construction of a new wharf four hundred and ninety-four feet long by eighty feet in width, adjacent to Howard Street. Contract made August 23, 1880, for $22,900; allowed for work on adjacent old Folsom Street Wharf, $2,478 47. Total, $25,378 47. Completed and paid for November 26, 1880.

Widening Old Broadway Wharf.—Thirty feet by four hundred and forty feet in length. Contract made September 7, 1880, for $7,541. Allowed for extra work, $225 92. Completed and paid for October 28, 1880. Total cost, $7,766 92.

Shed on Section 1, Seawall.—Nine hundred and four and a quarter feet long by one hundred feet wide. Contract made September 20, 1880, for $13,590. Completed and paid for February 18, 1881.

Raising and Replanking Portion of East Street, between Market Street and South Line of Jackson Street.—Six hundred and fifty feet long by thirty-eight feet wide. Contract made October 26, 1880. Completed and paid for January 24, 1881; $4,877 40.

Culvert across Section A of Seawall.—One hundred and ninety feet in length. Interior dimensions, six feet by ten and one half feet wide. Contract made November 3, 1880, for $3,974. Completed and paid for February 1st, 1881.

Shed at Ferry Slip Number Three.—Eighty feet by eighty-two feet. Contract made November 22, 1880, for $1,300. Allowed for extra work, $60. Completed and paid for January 24, 1881. Total cost, $1,360.

Widening Shed on Old Broadway Wharf.—Fifty-four and one half feet by four hundred and seventy-three feet long. Contract made November 30, 1880, for $3,990. Allowed for extra work, $46 50. Completed and paid for March 5, 1881. Total cost, $4,036 50.

Dolphin to Ferry Slip Number Eight.—Contract made May 24, 1880, for $885. Completed and paid for June 8, 1880.

Connection of Front Street Wharf with Section Four of the Seawall.—Contract made June 28, 1881. Completed and paid for; $2,062 53.

Freight Shed for South Pacific Coast Railroad Company.—Twenty-five feet wide by one hundred and sixty feet long, and addition to office. Contract made September 27, 1881, for $2,640. Allowed for extra work, $5. Completed and paid for November 8, 1881. Total cost, $2,645.

Macadamizing Roadway on Sections One, Two, Three, and Four, Sea-

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wall.—Four thousand feet in length by forty feet in width. Contract made October 25, 1881. Completed and paid for April 13, 1882; $6,079 93.

Culvert through Section 3 of Seawall, one hundred and ninety-seven feet in length; Interior Dimensions five feet by four feet.—Contract made January 31, 1882, for $1,439. Completed and paid for May 16, 1882.

Driving New and Pulling Old Fender Piles on Sections A, 1 and 2 of Seawall.—Contract made February 14, 1882. Completed and paid for April 18, 1882; $3,202 50.

III. Work contracted for prior to June 30, 1882, and not fully completed at that date:

New Wharf near foot of Mission Street, six hundred and six feet in length by eighty feet in width and removal of Old Wharf. Contract made January 17, 1882, for $27,749. Paid on account up to June 30, 1882, $15,000.

Widening Spear Street Wharf, fifty feet by six hundred and ninety in length.—Contract made April 25, 1882, for $19,747. Paid on account up to June 30, 1882, $2,000.

Reconstruction of Ferry Slips, Numbers 1, 2, and 4.—Contract made April 25, 1882, for $18,237. Paid on account up to June 30, 1882, $4,000.

In the "construction account" of the dates of second, third, and sixteenth December, 1881, appear three claims amounting together to $4,141 26, "allowed for repairs of Greenwich Wharf."

The history of these claims is as follows:

In the early part of 1874 the Board decided to construct a wharf on the outer half of Lombard Street between Sansome and Battery Streets, and on the outer half of Battery Street, between Lombard and Greenwich Streets. The owners of the property fronting on such intended wharves having, prior to that time, piled and planked their lots out to the lines of said streets, proposed to the Board that they would, at their own expense, put their structures in such good repair as should be deemed necessary by the Engineer of the Board, and allow the Board to assume control thereof for the purpose of collecting dockage, wharfage, and tolls, paying no rent or compensation therefor, on condition that the Board would thereafter keep and maintain the same in good repair at its own expense, and that the right to so use and occupy the premises should be terminable by either party on written notice of thirty days. This proposition was accepted by the Board, by special authority conferred on it by Act of the Legislature approved March 26, 1874. The premises having been put in good repair by the owners, the Board on April 29, 1874, entered into written contracts with the parties—which are on file in the office—assumed control of the premises, and collected dockage and tolls thereat until March 17, 1881, when it gave notice of the termination of the contracts.

The owners, thereupon, insisted that the Board had no right to surrender, nor were they bound to accept the premises until they were put in good repair. The Chief Engineer was directed to examine and report as to their condition, and to estimate the cost of proper repairs, if they were found in not good condition. He reported that such was the fact, and gave a detailed statement showing that the repairs would cost $4,141 26. As the seawall was being constructed in close proximity to these structures, the Board feared that

they would be greatly displaced by the mud forced against them, thus entailing on the Board a heavier cost for repairs. It was deemed advisable, therefore, to tender to the owners the cost of such repairs, as estimated by the Engineer of the Board, in full satisfaction of their claims. This was accepted. Before taking any action in the matter, the facts were submitted to the former and the present attorney of the Board, and they both concurred in advising that the Board was legally liable to the parties for the repairs stated in the contracts. Their opinions are on file in the office. Thereupon the Board paid the sum of $4,141 26 to the several parties, by drafts drawn on the Harbor Improvement Fund, as will appear in that account.

SEAWALL.

The work may be classed under the following heads:

I. That which was contracted for prior to June 30, 1880, and completed during the present fiscal term:

Section A.—Extending from Section 1, westwardly, five hundred and sixty-one feet, to the west line of Powell Street produced, and being two hundred feet wide.—Contract made December 18, 1879, at the following rates, viz.: for the wharf facing, five hundred and sixty-one feet long by sixty-one feet wide, of woodwork, $14,800; for the stone embankment, fifty-three cents per cubic yard; for the earth embankment, twenty-four cents per cubic yard. Total cost, $85,614 53. Of which there was paid, up to June 30, 1880, $11,591 30.

It was completed October 31, 1880, and was accepted after three months allowed for settling, and the balance of $74,023 23 was paid during the present fiscal term.

Section 3.—Extending southeast from Section 2, one thousand feet, and being ninety-one feet in width.—Contract made January 25, 1879, at the following rates, viz.: for wharf facing, one thousand feet long by fifty-one feet wide, of woodwork, $20,000; for the stone embankment, sixty-five cents per cubic yard; for the earth embankment, twenty-five cents per cubic yard. Total cost, $201,299 51; of which there was paid, prior to June 30, 1880, $51,085 51.

It was completed January 12, 1881, and was accepted, after three months allowed for settling, and the balance of $150,214 was paid during the present fiscal term.

Section 4.—Extending southeast from Section 3, one thousand feet, and being two hundred feet in width.—Contract made March 27, 1880, at the following rates, viz.: For wharf facing, one thousand feet long by sixty-one feet wide of woodwork, $24,500; for the stone embankment, sixty-nine and a half cents per cubic yard; for the earth embankment, thirty-four cents per cubic yard. Total cost, including return embankment at south end of the section, $240,872 01, which was all paid during the present fiscal term.

II. That which was contracted for subsequent to June 30, 1880, and completed during the present fiscal term:

Widening Section 3.—Earth embankment extending from Section 2 to Section 4, one thousand feet in length by one hundred and nine feet in width, with the exception of such portions thereof on the extensions of Francisco, Chestnut, and Sansome Streets as had been completed previously, thus completing the section to full width of

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two hundred feet. Contract made April 13, 1882, for the gross sum of $33,750, of which no part was paid up to June 30, 1882.

At this date there has been completed four thousand five hundred and sixty-one feet of seawall two hundred feet wide, consisting of a wharf-facing of woodwork its whole length, fifty-one feet wide for three thousand feet, and sixty-one feet wide for one thousand five hundred and sixty-one feet, and an embankment of stone and earth of an average surface width of one hundred and forty-nine feet.

The total cost of five sections has been $894,671 56, or $196 15 per lineal front foot. The total quantity of material used in the construction was: of stone, 675,430 cubic yards; of earth, 1,409,085 cubic yards; 3,401 piles; and 2,242,538 feet of lumber.

On the inner side of the wharf-facing of Sections 1, 2, 3, and 4 a macadam roadway has been constructed of the length of four thousand feet and of a width of forty feet. This was necessary for the purpose of travel, as the wharf-facing is exclusively devoted to the loading and discharging the freight of vessels. This roadway is sprinkled every day during the dry season, and kept in repair by contract for $125 per month.

The construction of these sections has greatly relieved the pressure for room at the other wharves, and much of the grain business has been transferred to Sections 1 and 2, which are covered by a shed two thousand feet in length by one hundred feet in width. The regulations of the Board in regard to the use of these sections and shed have proved a great convenience to the grain interests. Grain is landed there at a toll of five cents per ton, it is then allowed to remain under the shed fifteen days without further charge for removal or reshipment.

An idea will be formed of the business done at these sheds from the following statement:

	Landed at and Shipped from Section 1, from March, 1881, to June 30, 1881.	Landed at and Shipped from Section 2, from October, 1880, to June 30, 1882.
Wheat, sacks	1,030,191	2,095,712
Barley, sacks	161,374	819,867
Beans, sacks	41,073	125,604
Oats, sacks	12,365	63,243
Rye, sacks	2,865	
Corn, sacks	21,503	126,486
Flour, sacks	127,775	
Flour, half sacks		24,343
Four, quarter sacks		82,991

The Harbor Improvement Fund, which amounted, on June 30, 1880, to $308,710 75, has been so drawn on for the seawall and necessary wharf structures that the Board deemed itself not justified, under the terms of the law, in letting a contract for another section of the seawall; it should, however, progress, and there is no doubt that at least a five hundred foot section could be completed in 1883.

URGENT REPAIRS.

Section 2525, Political Code, directs that the outer half of the streets along the water front shall be kept in good repair by the

Harbor Commissioners, and the inner half shall be kept in repair jointly by the owners of the lots abutting thereon and the City and County of San Francisco.

By Section 19, Article XI, of the Constitution, no work can be done on the streets, the cost of which is assessable on private property, unless an estimate of such cost be made and an assessment in proportion to the benefits, on the property to be affected, shall be levied, collected, and paid into the City Treasury, before such work is commenced or any contract let therefor.

But the Supreme Court of California, in the case of *McDonald* v. *Patterson*, 54 Cal. 245, followed by the recent case of *Donahue* v. *Graham* (decided August 23, 1882), has practically held that the Act of April 1, 1872, known as the "Street Law," is no longer in force. There is therefore now no law in San Francisco by which any assessment for street work can be levied, collected, and paid into the City Treasury.

This has caused the stoppage of all street work, at least so far as the property-holders are concerned. And as the inner half of the water front streets is to be kept in repair by them and the city jointly, the result is that it is in a dilapidated and dangerous condition. The Commissioners keep the outer half in good condition, but they cannot legally expend a cent on the inner half. As it is, the outer half is now made to receive almost all the travel, in consequence of the bad condition of the inner half, thus imposing on the State an increased expense for repairs.

The amount of $3,000 per month now allowed to be expended is too small for the necessary repair of the wharves and outer half of the water front roadway, and should, by an amendment of the law, be increased to $5,000. The propriety of such an amendment is obvious, from the fact that the wharves, piers, and outer half of the water front roadway cover fifty-two and one third acres in area, and required for their construction 36,254 piles, subject to the ravages of the teredo and limnoria, and 17,758,247 feet (board measure) of caps, sills, and planking, subject to natural decay and destruction by travel.

DREDGING.

The annexed statement shows that, during the past two years, there has been dredged 1,372,489 cubic yards, at a cost of $100,205 97, or 7.3 cents per cubic yard. This is slightly in excess of the cost for the year ending June 30, 1880, owing to the fact that the dredgers have been much employed in dredging around the stumps of dangerous piles, broken off at or below the mud level, in order to permit their removal, and removing stone from the face of Section 4, which was carried out by the mud displaced in the construction of said section.

FIRE SERVICES.

The "Governor Irwin" tugboat, in addition to her regular duty of towing the mud-scows, has responded to fifty-eight fire alarms. On eleven of these occasions very valuable services were rendered, much property having been saved by her eight powerful streams. By day and night she is ready for duty, and her promptness and efficiency have been repeatedly commended by the Fire Department and the public press of the city.

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PRESERVATION OF PILES.

For years past this subject has claimed the attention of the Board, but so far all experiments to prevent the destruction of the piles by the teredo and limnoria have proved of no value. As the new wharf at Mission Street was about to be constructed, the Board deemed it a good opportunity to again renew such experiments. A notice was therefore published, inviting all persons who were familiar with the subject to submit their views and plans, and stating that the Board would pay the expense of preparing and driving a limited number of piles on each plan proposed. In response to this notice nine plans were proposed, all agreeing in the mode of protection by an artificial covering of the submerged part of the pile, but differing as to the materials to be used. Ninety-nine piles prepared by the different plans have been driven at that wharf, and placed alternately so as to afford a test of their relative merits, or whether they have any at all. A very careful entry has been made on the register of the Chief Engineer's office of the facts and exact location of these piles, and they will be examined from time to time and their condition noted. As the rest of the piles of the wharf are driven with the bark on, which affords protection for about two years, it remains to be seen whether these several artificial coverings will last as long or longer. The importance of the subject will be seen from the fact that the wharves have about thirty-six thousand piles which are exposed to the ravages of these insects.

COLLECTION OF REVENUE.

The Board has heretofore in its reports expressed decided disapproval of the mode of collecting the charges on merchandise by the load, estimated by the Toll Collector by weight or measurement as it passes on or off the wharves. The main objection to the system is that it is too expensive. It will be seen in the report for the year ending June 30, 1880, the cost of collection was 16.8 per cent of the amount collected during that year. For the past two years the dockage and tolls collected amount to $816,913 73, and the salaries of Wharfingers and Toll Collectors amount to $121,245 06—that is 14.84 per cent of the amount collected.

The Board has no power to remedy this evil without some appropriate legislation. They think that a far simpler, surer, and more economical system is the collection directly from the master, owner, or consignee of the vessel of the charge on the merchandise by measurement or weight, as stated in the manifest. An Act was passed at the session of the Legislature of 1880 (Stats. 1880, p. 10) authorizing the adoption of such system, but it proved of no avail, as it contained some provisions which, soon after its passage, the United States Supreme Court, in a similar case (*Guy* v. *City of Baltimore*, 100 U. S. S. Ct. Rep. 434) declared unconstitutional. At the session of 1881 a bill, divested of such provisions, was again introduced, and referred to the Committee on Commerce and Navigation in the Senate, but no further action was taken thereon.

The subject deserves the attention of the Legislature, and the Board recommends the passage of the bill introduced at its last regular session.

WM. BLANDING,
GEO. S. EVANS,
WM. A. PHILLIPS,
Board of State Harbor Commissioners.

July 1, 1882.

TABULAR STATEMENTS.

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BOARD OF STATE HARBOR COMMISSIONERS' BIENNIAL REPORT, SHOWING THE RECEIPTS AND DISBURSEMENTS FOR THE TWO FISCAL YEARS ENDING JUNE 30, 1882.

Receipts.	1880-81.	1881-82.	Total.
Section 1, Seawall Wharf	$5,755 09	$10,699 65	$16,454 74
Section 2, Seawall Wharf	8,164 70	12,277 76	20,442 46
Section 3, Seawall Wharf	4,254 45	17,080 40	21,334 85
Section 4, Seawall Wharf		2,524 25	2,524 25
Battery Street Wharf	4,398 30		4,398 30
Front and Union Streets Wharves	18,855 77	13,992 05	32,847 82
Green Street Wharf	24,010 05	21,513 35	45,523 40
Vallejo Street Wharf	30,324 97	29,602 30	59,927 27
Broadway Wharf	24,464 35	23,605 70	48,070 05
Pacific Street Wharf	25,146 33	19,148 05	44,294 38
Jackson Street Wharf	18,289 65	17,628 70	35,918 35
Washington Street Wharf	22,233 65	21,587 25	43,820 90
Ferries (Slips 1 to 8, inclusive)	85,541 65	91,983 80	177,525 45
Mission Street Wharf	11,475 04	11,311 65	22,786 69
Mission Street Wharf, No. 2	14,275 37	16,257 10	30,532 47
Howard Street Wharf	7,597 17	7,620 56	15,217 73
Howard Street Wharf, No. 2	6,620 75	17,433 15	24,053 90
Folsom Street Wharf	8,138 15	8,254 90	16,393 05
Harrison and Spear Streets Wharves	18,426 44	19,837 60	38,264 04
Main Street Wharf	15,982 38	15,911 46	31,893 84
Second and Berry Streets Wharves	2,617 59	2,696 65	5,314 24
Channel Street Wharf	3,705 93	4,430 92	8,136 85
Channel Street (south) Wharf	420 83	876 50	1,297 33
Space for Scales	636 00	611 50	1,247 50
Oregon Improvement Company (lease)	1,800 00	7,200 00	9,000 00
Union Lumber Association (as per lease)	3,600 00		3,600 00
Pacific Mail Steamship Company (lease)	15,000 00	15,000 00	30,000 00
Central Pacific Railroad (tolls)	32,584 13	37,357 24	69,941 37
Merchants' Dry Dock Company (rent)	3,300 00	3,300 00	6,600 00
United States Barge Office (rent)	120 00	360 00	480 00
Expense account (sale of horse and buggy)	90 00		90 00
Urgent repairs (sale of old iron, lumber, etc.)	757 25	473 35	1,230 60
Dredger No. 1 (received for dredging)	250 00	1,808 00	2,058 00
Dredger No. 1 (received for use of extra scow)		108 00	108 00
Dredger No. 2 (received for dredging)	378 00	2,384 00	2,762 00
Dredger No. 2 (received for use of scow)		108 00	108 00
Dredger No. 2 (sale of old material)	29 60	12 10	41 70
Tug "Governor Irwin" (sale of old material)	138 60	9 70	148 30
Fire account (sale of old material)	55 30		55 30
	$419,437 49	$455,005 64	$874,443 13
San Francisco Harbor Improvement Fund—Amount drawn	$527,487 44	$131,140 42	$658,627 86
			$1,533,070 99

Receipts and Disbursements—Continued.

Disbursements.	1880-81.	1881-82.	Total.
Salaries of Commissioners and Secretaries	$13,200 00	$12,391 66	$25,591 66
Salaries of Wharfingers, Collectors, and Watchmen	64,276 36	66,166 70	130,443 06
Salary of Attorney	2,400 00	2,400 00	4,800 00
Salaries of Chief Engineer, Assistant, and Draughtsman	6,000 00	6,300 00	12,300 00
Salaries of Chief Wharfinger and Assistant	4,800 00	4,800 00	9,600 00
Expense account, rent, fuel, stationery, etc.	7,159 22	6,726 92	13,886 14
Urgent repairs—amount paid	29,802 77	30,447 31	60,250 08
Construction account—amount paid	170,170 20	55,655 27	225,825 47
Dredger No. 1—current expenses	13,801 71	14,372 87	28,174 58
Dredger No. 2—current expenses	15,021 55	14,809 31	29,830 86
Tug Anasha—current expenses	10,146 34	8,614 43	18,760 77
Tug Gov. Irwin—current expenses	12,492 92	10,946 84	23,439 76
Fire account—current expenses	4,335 99	4,320 00	8,655 99
Cleaning wharves	3,082 25	3,619 18	6,701 43
Legal expenses	119 50	72 25	191 75
Seawall account	383,174 96	92,804 98	475,979 94
Profit and loss (personal injuries, and damage to vessels, and personal property)	449 33		449 33
Wharf offices and furniture	1,335 83	1,166 12	2,501 95
Harbormaster's expense account—notice to remove vessels in the stream	62 50	125 00	187 50
Overpaid dockage, returned	154 89	361 72	516 61
Overpaid tolls, returned		34 55	34 55
Gas used at Washington Street Wharf	46 80	24 90	71 70
Moving vessels	23 90	21 15	45 05
Office rent—Second and Berry Street Wharf	60 00	45 00	105 00
Barrels for top of Seawall Sheds	25 50		25 50
	$742,142 52	$336,226 16	$1,078,368 68
San Francisco Harbor Improvement Fund—amount remitted	$204,782 41	$249,919 90	$454,702 31
			$1,533,070 99

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STATEMENT OF THE AMOUNT PAID ON ACCOUNT OF CONSTRUCTION FOR THE TWO FISCAL YEARS ENDING JUNE 30, 1882.

Date.	To Whom Paid.	On Account of.	Amount.
1880.			
July 1	J. McMullen	Flooring of shed on Section 2, Seawall—on account	
July 10	Winterburn & Co.	Printing specifications	$500 00
Jnly 15	Daily Alta	Advertising for construction	6 00
July 20	J. McMullen	Flooring of shed on Section 2, Seawall—on account	34 80
July 33	Terrill & Slaven	Shed on Spear Street Wharf	4,000 00
July 23	E. C. Boobar	Reconstructing Slip No. 3, Oakland ferry	2,750 00
July 31	J. W. Donohue	Services supervising construction	1,525 00
Aug. 5	J. McMullen	Flooring of shed on Section 2, Seawall—on account	78 00
Aug. 7	A. Onderdonk	Trenches for drainpipe, shed on Section 2, Seawall	3,000 00
Aug. 13	Thos. Thompson	Widening Broadway Wharf	15 75
Aug. 13	J. McMullen	Flooring of shed on Section 2, Seawall—on account	7,440 00
Aug. 20	J. McMullen	Flooring of shed on Section 2, Seawall—in full	3,000 00
Aug. 25	Payroll	Labor digging trench for gutters—Seawall shed	2,743 66
Aug. 26	Hanson, Ackerson & Co.	Lumber furnished	30 00
Aug. 27	Daily Alta	Advertising for construction	1,622 00
Aug. 28	Winterburn & Co.	Printing specifications	14 50
Aug. 31	J. W. Donohue	Services supervising construction	16 50
Sept. 2	F. C. Hall	Services supervising construction	78 00
Sept. 6	W. R. Allen & Co.	Drains on shed—Section 1, Seawall	54 00
Sept. 10	E. F. Swett	Painting office—Section 2, Seawall	120 50
Sept. 11	Winterburn & Co.	Printing specifications	15 00
Sept. 11	C. S. Dingley	Ferry slip south of Market Street—on account	8 00
Sept. 14	E. C. Boobar	Driving and pulling piles	4,500 00
Sept. 22	Hanson, Ackerson & Co.	Lumber furnished	1,989 00
Sept. 23	Daily Alta	Advertising for construction	1,609 66
Sept. 27	W. S. Phelps & Co.	Blacksmith work	23 20
Sept. 28	Winterburn & Co.	Printing specifications	351 33
Sept. 28	Edw. Denny & Co.	Stationery	8 50
Sept. 30	C. L. Dingley	Ferry slip south of Market Street—on account	9 90
Sept. 30	John Sanderson	Services supervising construction	7,000 00
Sept. 30	C. Smith	Services supervising construction	28 50
Sept. 30	J. W. Donohue	Services supervising construction	66 00
Sept. 30	D. Ross	Services supervising construction	81 00
Oct. 5	J. F. Kennedy	Flooring of shed on Section 1, Seawall—on account	21 00
Oct. 7	John P. Sheldon	Widening Broadway Wharf on north side—on account	2,000 00
			2,000 00

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Oct. 9	Thomas H. Selby	Spikes for gutter on Seawall	11 00
Oct. 11	E. C. Boobar	Driving and pulling piles	337 00
Oct. 12	O. F. Graves	Extension of East Street and new pier—on account	8,400 00
Oct. 13	Charles Harloe	Services supervising construction	3 00
Oct. 16	F. C. Hall	Services supervising construction	3 00
Oct. 20	J. F. Kennedy	Flooring of shed on Section 1, Seawall—on account	3,000 00
Oct. 25	W. J. Adams	Furnishing lumber	2,335 42
Oct. 27	C. L. Dingley	Ferry slip south of Market Street—on account	10,000 00
Oct. 28	J. P. Sheldon	Widening Broadway Wharf on north side—in full	5,766 92
Oct. 29	Turner, Kennedy & Shaw	Furnishing lumber	75 13
Oct. 29	D. Ross	Services supervising construction	60 00
Oct. 30	E. C. Boobar	Driving and pulling piles	253 00
Oct. 30	J. F. Kennedy	Flooring of shed on Section 1, Seawall—in full	5,320 74
Oct. 30	J. W. Donohue	Services supervising construction	78 00
Oct. 30	C. Smith	Services supervising construction	63 00
Oct. 30	John Sanderson	Services supervising construction	30 00
Nov. 4	Charles Harloe	Services supervising construction	36 00
Nov. 10	Renton, Holmes & Co.	Shed on Section 2, Seawall	13,845 42
Nov. 11	Daily Alta	Advertising for construction	23 20
Nov. 15	Winterburn & Co.	Printing specifications	14 00
Nov. 16	O. F. Graves	Extension of East Street and new pier—on account	10,000 00
Nov. 17	W. J. Adams	Lumber furnished	996 62
Nov. 18	Starbird & Goldstone	Lumber for gutters, Section 2, Seawall	280 81
Nov. 22	A. Onderdonk	Grading Powell Street	2,612 63
Nov. 24	Hanson, Ackerson & Co.	Lumber for reconstructing Folsom Street Wharf	3,313 10
Nov. 26	O. F. Graves	Extension of East Street and new pier—in full	6,978 47
Nov. 27	Winterburn & Co.	Printing specifications	20 00
Nov. 30	Charles Harloe	Services supervising construction	75 00
Nov. 30	C. Smith	Services supervising construction	54 00
Nov. 30	J. W. Donohue	Services supervising construction	81 00
Dec. 7	San Francisco Chronicle	Advertising for construction	20 00
Dec. 7	C. L. Dingley	Ferry slip south of Market street, in full	14,831 75
Dec. 7	Daily Alta	Advertising for construction	11 60
Dec. 13	Savage & Son	Gratings, shed, Section 1, Seawall	1 00
Dec. 15	W. E. Mighell	Anchor, etc., for buoy off Folsom Street Wharf	127 00
Dec. 16	Peter Robinson	Hauling rock to Powell Street Sewer	41 00
Dec. 24	Hanson, Ackerson & Co.	Lumber furnished	944 95
Dec. 24	Starbird & Goldstone	Lumber furnished	292 48
Dec. 31	J. W. Donohue	Services supervising construction	81 00
Dec. 31	Daniel Ross	Services supervising construction	60 00
Dec. 31	J. J. Morrison	Shed on Broadway Wharf, on account	350 00
Dec. 31	Charles Harloe	Services supervising construction	75 00
		Amount carried forward	$137,643 04

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STATEMENT OF THE AMOUNT PAID ON ACCOUNT OF CONSTRUCTION—Continued.

Date.	To Whom Paid.	On Account of.	Amount.	
1881.				
		Amount brought forward	$137,643 04	
Jan. 12	Thomas A. Day	Shed on Section 1, Seawall, on account	6,000 00	
Jan. 14	Vincent Frederick	Painting tops of piles at ferry slips	20 00	
Jan. 15	J. J. Morrison	Shed on Broadway Wharf, on account	1,200 00	
Jan. 25	Charles F. Doe	Raising and replanking East Street	4,887 40	
Jan. 25	Charles H. Shaw	Shed at Ferry Slip No. 3	1,360 00	
Jan. 31	Charles Harloe	Services supervising construction	78 00	
Jan. 31	Daniel Ross	Services supervising construction	75 00	
Jan. 31	J. W. Donohue	Services supervising construction	78 00	
Feb. 3	McMullen & Finley	Culvert through Section "A," Seawall	3,974 00	
Feb. 5	J. J. Morrison	Shed on Broadway Wharf, on account	1,000 00	
Feb. 15	McMullen & Finley	Driving and pulling piles	1,057 31	
Feb. 15	McMullen & Finley	Piles for Fireboat Wharf	1,107 50	
Feb. 15	John McCann	Shingling shed on Broadway Wharf	270 00	
Feb. 17	McMullen & Finley	Driving and pulling piles	568 00	
Feb. 21	Thos. H. Day	Shed on Section 1, Seawall, in full	7,590 00	
Feb. 28	Chas. Harloe	Services supervising construction	48 00	
Feb. 28	D. Ross	Services supervising construction	72 00	
Mar. 5	J. J. Morrison	Shed on Broadway Wharf, in full	1,486 50	
Mar. 5	C. Smith	Services supervising construction	12 00	
Mar. 11	McMullen & Finley	Reconstructing Stuart Street Wharf	550 00	
Mar. 11	J. W. Donohue	Services supervising construction	30 00	
Mar. 15	Overland Freight T. Co	Freight charges on gate hangers for Broadway Wharf	10 20	
Mar. 21	Daniel Ross	Services supervising construction	9 00	
Mar. 26	Prescott Manufacturing Co	Gate hangers for Broadway Wharf	31 50	
Apl. 28	Huntington, Hopkins & Co	Gate hangers for Fire House	8 00	
May 21	Winterburn & Co	Printing specifications	5 00	
May 31	Daily Alta	Advertising for construction	19 75	
June 8	G. M. Milledge	Painting fence, S. P. C. R. R. ferry landing	106 00	
June 8	McMullen & Finley	Dolphin at freight slip, S. P. C. R. R.	885 00	
		Amount paid for the fiscal year ending June 30, 1881		$170,170 20
July 9	Winterburn & Co	Printing specifications	$6 00	
July 13	Carolan, Cory & Co	Gate hangers, S. P. C. R. R. ferry slip	15 50	
July 22	Daily Alta	Advertising for construction	16 00	
July 26	Evening Post	Advertising for construction	16 00	

July 28	W. J. Adams	Lumber furnished	1,528 44	
July 28	M. C. Hawley & Co	Gate hangers, S. P. C. R. R. ferry slip	19 00	
July 30	McMullen & Finley	Connecting Front Street with Section 4, Seawall	2,062 53	
Aug. 29	Hanson & Co	Lumber furnished	1,171 63	
Sept. 24	Daily Alta	Advertising for construction	15 00	
Sept. 24	Evening Post	Advertising for construction	15 00	
Oct. 8	Winterburn & Co	Printing specifications	10 00	
Oct. 8	Daily Report	Advertising for construction	15 00	
Oct. 11	Evening Post	Advertising for construction	15 00	
Oct. 29	Evening Post	Advertising for construction	25 00	
Oct. 31	F. C. Hall	Services supervising construction	22 00	
Oct. 31	Daily Report	Advertising for construction	25 00	
Nov. 8	Thomas H. Day	Freight shed, S. P. C. R. R.	2,645 00	
Nov. 14	Winterburn & Co.	Printing specifications	4 50	
Nov. 30	Payroll	Services supervising construction	208 60	
Nov. 30	E. C. Boobar	Driving and pulling piles	1,111 60	
Dec. 2	Mrs. M. A. McCabe	Claim allowed for repairs at Greenwich Wharf	1,799 14	
Dec. 3	George C. Bode	Claim allowed for repairs at Greenwich Wharf	1,147 04	
Dec. 16	Flint, Bixby & Co.	Claim allowed for repairs at Greenwich Wharf	1,195 08	
Dec. 24	W. P. Humphreys	Locating south corner of East and Folsom Streets	12 00	
Dec. 27	W. J. Adams	Lumber furnished	770 46	
Dec. 30	W. J. Donohue	Services supervising construction	15 00	
Dec. 31	Payroll	Services supervising construction	192 00	
Dec. 31	G. J. Smith	Painting new work at ferry slips	66 80	
1882.				
Jan. 13	W. S. Ray & Co.	Tin work on shed at ferry slips	67 04	
Jan. 28	Daily Report	Advertising for construction	22 00	
Jan. 30	Winterburn & Co.	Printing specifications	16 50	
Jan. 31	Payroll	Services supervising construction	192 00	
Jan. 31	Evening Post	Advertising for construction	22 50	
Jan. 31	Turner, Kennedy & Shaw	Lumber furnished	1,058 93	
Jan. 31	E. C. Boobar	Driving and pulling piles	660 00	
Feb. 14	Daily Report	Advertising for construction	21 00	
Feb. 18	Evening Post	Advertising for construction	22 50	
Feb. 28	Payroll	Services supervising construction	172 00	
Feb. 28	Daily Report	Advertising for construction	39 00	
Feb. 28	S. F. Call	Advertising for construction	11 25	
Feb. 28	Evening Post	Advertising for construction	39 00	
Feb. 28	J. W. Donohue	Services supervising construction	33 00	
Feb. 28	Daily Examiner	Advertising for construction	12 25	
Feb. 28	S. F. News Letter	Advertising for construction	3 00	
Feb. 28	Turner, Kennedy & Shaw	Lumber furnished	968 16	
		Amount carried forward	$17,514 85	$170,170 20

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STATEMENT OF THE AMOUNT PAID ON ACCOUNT OF CONSTRUCTION—Continued.

Date.	To Whom Paid.	On Account of.	Amount.	
1881.				
		Amount brought forward	$17,514 85	$170,170 20
Mar. 16	Payroll	Services supervising construction	32 00	
Mar. 31	Winterburn & Co.	Printing specifications	4 50	
Mar. 31	Evening Post	Advertising for construction	122 00	
Mar. 31	J. W. Donohue	Services supervising construction	108 00	
Mar. 31	F. C. Hall	Services supervising construction	36 00	
Apr. 14	Hancock & Kelso	Macadamizing roadway on Seawall	6,079 93	
Apr. 14	Daily Report	Advertising for construction	122 00	
Apr. 19	B. McMahon & Co.	Driving piles at ferry slips	1,278 75	
Apr. 20	McMullen & Finley	Fender piles at Seawall	3,202 50	
Apr. 29	Evening Post	Advertising for construction	45 00	
Apr. 29	Payroll	Services supervising construction	140 00	
Apr. 29	J. W. Donohue	Services supervising construction	104 00	
Apr. 29	Daily Report	Advertising for construction	45 00	
May 16	G. Raisch	Culvert through Section 3, Seawall	1,439 00	
May 26	W. H. Raye	Cementing ribboning at ferry slips	76 50	
May 27	Winterburn & Co.	Printing specifications	7 50	
May 31	J. W. Donohue	Services supervising construction	108 00	
May 31	B. McMahon & Co.	Driving and pulling piles	540 25	
May 31	Hanson & Co.	Lumber furnished	1,452 65	
June 8	John P. Sheldon	Pier, south of Mission Street—on account	6,000 00	
June 8	McMullen & Finley	Reconstruction of ferry slips 1, 2, and 4—on account	4,000 00	
June 9	W. P. Humphreys	Locating corners on Water Front	36 00	
June 16	Chas. Hulet	Assisting in making survey	6 00	
June 21	Geo. J. Smith	Painting and varnishing San Rafael ferry building	151 75	
June 24	Geo. J. Smith	Painting and varnishing Pacific Street new office	57 50	
June 24	Pearce, Beardsley & Co.	Preparing piles with Pearce's compound	596 34	
June 28	A. M. Simpson & Bro.	Lumber furnished	1,006 25	
June 28	H. C. Holmes	Expenses examining windmills	20 00	
June 30	John P. Sheldon	Pier, south of Mission Street—on account	9,000 00	
June 30	McMullen & Finley	Widening Spear Street Wharf—on account	2,000 00	
June 30	J. W. Donohue	Services supervising construction	104 00	
June 30	Frank Shay	Coating and preparing piles	230 00	
		Amount paid for the fiscal year ending June 30, 1882		$55,655 27
		Amount paid for the two fiscal years ending June 30, 1882		$225,825 47

STATEMENT OF THE SAN FRANCISCO HARBOR IMPROVEMENT FUND FOR THE TWO FISCAL YEARS ENDING JUNE 30, 1882.

Dr.

1880.				
July 24	To amount remitted by Commissioners	$7,000 00		
Aug. 3	To amount remitted by Commissioners	9,165 63		
	Total amount remitted by Commissioners for July		$16,165 63	
Aug. 18	To amount remitted by Commissioners	$5,000 00		
Sept. 2	To amount remitted by Commissioners	9,812 44		
	Total amount remitted by Commissioners for August		14,812 44	
Sept. 14	To amount remitted by Commissioners	$5,000 00		
Oct. 2	To amount remitted by Commissioners	11,235 51		
	Total amount remitted by Commissioners for September		16,235 51	
Nov. 3	To amount remitted by Commissioners for October		16,329 78	
Nov. 15	To amount remitted by Commissioners	$5,000 00		
Dec. 3	To amount remitted by Commissioners	14,569 16		
	Total amount remitted by Commissioners for November		19,569 16	
Dec. 16	To amount remitted by Commissioners	$5,000 00		
1881.				
Jan. 5	To amount remitted by Commissioners	10,598 98		
	Total amount remitted by Commissioners for December		15,598 98	
Jan. 13	To amount remitted by Commissioners	$5,000 00		
Feb. 3	To amount remitted by Commissioners	15,543 20		
	Total amount remitted by Commissioners for January		20,543 20	
Feb. 17	To amount remitted by Commissioners	$5,000 00		
March 4	To amount remitted by Commissioners	9,106 64		
	Total amount remitted by Commissioners for February		14,106 64	
March 16	To amount remitted by Commissioners	$5,000 00		
April 5	To amount remitted by Commissioners	13,136 65		
	Total amount remitted by Commissioners for March		18,136 65	
May 5	Total amount remitted by Commissioners for April		18,384 39	
May 13	To amount remitted by Commissioners	$4,000 00		
June 3	To amount remitted by Commissioners	12,351 96		
	Total amount remitted by Commissioners for May		16,351 96	
July 6	Total amount remitted by Commissioners for June		18,548 07	
Aug. 4	Total amount remitted by Commissioners for July		15,299 42	
Sept. 3	To amount remitted by Commissioners	$20,000 00		
Sept. 5	To amount remitted by Commissioners	3,645 76		
	Total amount remitted by Commissioners for August		23,645 76	
Sept. 21	To amount remitted by Commissioners	$5,000 00		
Oct. 4	To amount remitted by Commissioners	16,103 84		
	Total amount remitted by Commissioners for September		21,103 84	
Oct. 20	To amount remitted by Commissioners	$5,000 00		
Nov. 5	To amount remitted by Commissioners	23,529 09		
	Total amount remitted by Commissioners for October		28,529 09	
	Amount carried forward			$293,359 52

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STATEMENT OF THE SAN FRANCISCO HARBOR IMPROVEMENT FUND—Continued.

1881.	Amount brought forward		$293,359 52
Nov. 19	To amount remitted by Commissioners	$8,000 00	
Dec. 2	To amount remitted by Commissioners	20,825 29	
	Total amount remitted by Commissioners for November		28,825 29
Dec. 20	To amount remitted by Commissioners	$7,000 00	
1882.			
Jan. 7	To amount remitted by Commissioners	20,728 13	
	Total amount remitted by Commissioners for December		27,728 13
Jan. 21	To amount remitted by Commissioners	$7,000 00	
Feb. 7	To amount remitted by Commissioners	14,205 27	
	Total amount remitted by Commissioners for January		21,205 27
March 8	Total amount remitted by Commissioners for February		14,813 91
April 8	Total amount remitted by Commissioners for March		21,973 21
May 10	Total amount remitted by Commissioners for April		15,305 49
June 8	Total amount remitted by Commissioners for May		15,680 83
July 8	Total amount remitted by Commissioners for June		15,809 66
	Total amount remitted		$454,702 31
	Balance in San Francisco Harbor Improvement Fund, July 1, 1880		308,710 75
			$763,413 06

STATEMENT OF THE SAN FRANCISCO HARBOR IMPROVEMENT FUND, FOR THE TWO FISCAL YEARS ENDING JUNE 30, 1882—Cr.

Date.	Order.	No.	Contract.	Amount.
1880.				
July 1	J. McMullen	238	Flooring of Shed on Section 2, Seawall—on account	$500 00
July 6	A. Onderdonk	239	Constructing Seawall	24,691 33
July 6	Hancock & Kelso	240	Constructing Seawall	8,062 60
July 20	J. McMullen	241	Flooring of Shed on Section 2, Seawall—on account	4,000 00
July 22	E. C. Boobar	242	Reconstructing Ferry Slip No. 3	1,523 00
July 22	Terrill & Slaven	243	Shed on Spear Street Wharf	2,750 00
Aug. 4	Hancock & Kelso	244	Constructing Seawall	10,725 36
Aug. 4	A. Onderdonk	245	Constructing Seawall	18,572 74
Aug. 5	J. McMullen	246	Flooring of Shed on Section 2, Seawall—on account	3,000 00
Aug. 12	Thos. Thompson & Co.	247	Widening Broadway Wharf	7,440 00
Aug. 13	J. McMullen	248	Flooring of Shed on Section 2, Seawall—on account	3,000 00
Aug. 19	J. McMullen	249	Flooring of Shed on Section 2, Seawall—in full	2,743 66
Sept. 2	Hancock & Kelso	250	Constructing Seawall	10,388 87
Sept. 2	A. Onderdonk	251	Constructing Seawall	13,292 08
Sept. 2	A. Onderdonk	252	Constructing Seawall	1,332 00
Sept. 10	C. L. Dingley	253	Ferry Slip, south of Market Street—on account	4,500 00
Sept. 30	C. L. Dingley	254	Ferry Slip, south of Market Street—on account	7,000 00
Oct. 5	Jno. F. Kennedy	255	Flooring for Shed, on Section 1, Seawall—on account	2,000 00
Oct. 5	Hancock & Kelso	256	Constructing Seawall	12,296 95
Oct. 5	A. Onderdonk	257	Constructing Seawall	11,931 78
Oct. 5	A. Onderdonk	258	Constructing Seawall	2,166 00
Oct. 7	John P. Sheldon	259	Widening Broadway Wharf—on account	2,000 00
Oct. 12	O. F. Graves	260	Extending East Street and new Pier—on account	8,400 00
Oct. 19	John F. Kennedy	261	Flooring for Shed, Section 1, Seawall—on account	3,000 00
Oct. 26	C. L. Dingley	262	Ferry Slip, south of Market Street—on account	10,000 00
Oct. 28	John P. Sheldon	263	Widening Broadway Wharf—in full	5,766 92
Oct. 29	John F. Kennedy	264	Flooring for Shed on Section 1, Seawall—in full	5,320 74
Nov. 4	A. Onderdonk	265	Constructing Seawall	9,314 36
Nov. 8	Hancock & Kelso	266	Constructing Seawall	11,330 64
Nov. 9	Renton, Holmes & Co.	267	Shed on Section 2, Seawall	13,845 42
Nov. 16	O. F. Graves	268	Extending East Street and new Pier—on account	10,000 00
Nov. 22	A. Onderdonk	269	Grading Powell Street	2,612 63
Nov. 23	Hansen, Ackerson & Co.	270	Lumber for reconstructing Folsom Street Wharf	3,313 10
			Amount carried forward	$236,821 18

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STATEMENT OF THE HARBOR IMPROVEMENT FUND—Continued.

Date.	Order.	No.	Contract.	Amount.
1880.				
			Amount brought forward	$236,821 18
Nov. 26	O. F. Graves	271	Extending East Street and new Pier—in full	6,978 47
Dec. 2	A. Onderdonk	272	Constructing Seawall	13,059 94
Dec. 2	A. Onderdonk	273	Constructing Seawall	19,653 55
Dec. 6	C. L. Dingley	275	Ferry Slip, south of Market Street—in full	14,831 75
Dec. 30	J. J. Morrison	276	Shed on Broadway Wharf—on account	350 00
1881.				
Jan. 4	A. Onderdonk	277	Constructing Seawall	7,080 27
Jan. 4	A. Onderdonk	278	Constructing Seawall	16,151 27
Jan. 11	Thomas H. Day	279	Shed on Section 1, Seawall—on account	6,000 00
Jan. 13	J. J. Morrison	280	Shed on Broadway Wharf—on account	1,200 00
Jan. 13	A. Onderdonk	281	Constructing Seawall	1,840 00
Jan. 13	A. Onderdonk	283	Constructing Seawall	291 19
Jan. 24	Charles H. Shaw	284	Shed at Ferry Slip No. 3	1,360 00
Jan. 24	Charles F. Doe	285	Raising and replanking East Street	4,877 40
Feb. 1	McMullen & Finley	286	Culvert through Section "A," Seawall	3,974 00
Feb. 4	J. J. Morrison	287	Shed on Broadway Wharf—on account	1,000 00
Feb. 4	Hancock & Kelso	288	Constructing Seawall	21,218 81
Feb. 4	A. Onderdonk	289	Constructing Seawall	20,747 27
Feb. 18	Thomas H. Day	290	Shed on Section 1, Seawall	7,590 00
Mar. 5	J. J. Morrison	291	Shed on Broadway Wharf—in full	1,486 50
Mar 5	A. Onderdonk	292	Constructing Seawall	18,791 44
Apr. 5	A. Onderdonk	293	Constructing Seawall	26,940 44
Apr. 9	A. Onderdonk	294	Constructing Seawall	27,960 00
Apr. 9	A. Onderdonk	295	Constructing Seawall	22,180 31
May 3	A. Onderdonk	296	Constructing Seawall	22,058 25
June 7	A. Onderdonk	297	Constructing Seawall	23,044 40
July 7	A. Onderdonk	298	Constructing Seawall	12,270 00
Aug. 4	A. Onderdonk	299	Constructing Seawall	6,738 45
Aug. 16	A. Onderdonk	300	Constructing Seawall	4,269 76
Sept. 8	A. Onderdonk	302	Constructing Seawall	8,655 00
Nov. 8	Thomas H. Day	303	Freight Shed S. P. C. R. R	2,645 00
Nov. 15	A. Onderdonk	304	Constructing Seawall	40,000 00
Nov. 15	A. Onderdonk	305	Constructing Seawall	18,054 27
Dec. 1	Mrs. M. A. McCabe	306	Claim allowed for repairs at Greenwich Wharf	1,799 14
Dec. 1	Geo. C. Bode	307	Claim allowed for repairs at Greenwich Wharf	1,147 04
Dec. 15	John H. Dickinson	308	Claim allowed for repairs at Greenwich Wharf	1,195 08

1882.				6,079 93
Apr. 13	Hancock & Kelso	309	Macadamized roadway on Seawall	1,278 75
Apr. 18	B. McMahon & Co	310	Driving piles at Ferry Slips	3,202 50
Apr. 18	McMullen & Finley	311	Fender piles at Seawall	1,439 00
May 16	G. Raisch	312	Culvert through Section 3, Seawall	6,000 00
June 8	John P. Sheldon	313	Pier south of Mission Street—on account	4,000 00
June 8	McMullen & Finley	314	Reconstruction of Ferry Slips 1, 2, 4—on account	1,366 50
June 8	Hancock & Kelso	315	Constructing Seawall	9,000 00
June 29	John P. Sheldon	316	Pier south of Mission Street—on account	2,000 00
June 29	McMullen & Finley	317	Widening Spear Street Wharf—on account	
				$658,627 86
			Balance in San Francisco Harbor Improvement Fund	104,785 20
				$763,413 06

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COMPARATIVE STATEMENT OF RECEIPTS AND DISBURSEMENTS.

Fiscal Year—From the Organization of the Commission	Receipts—From Dockage, Tolls, Wharfage, Rents, etc	Expenses—Salaries, Commissioners, Secretary, Clerk (and Law Fees), Wharfinger, Collectors, Fuel, Rent, Printing, Stationery	Percentage per Year	Construction and Repairs—Building Wharves, Bulkheads, Sheds, etc., and Repairs on the same	Seawall	Dredging—All Dredging up to 1874 was done under Contract. Since by Commissioners	Purchase of Dredgers, Scows, and repairs	Miscellaneous	Remitted State Treasurer	Drawn from State Treasurer
1863–4	$117,848 28	$25,354 84	21.50	$67,599 82				$676 25	$71,897 39	$47,680 02
1864–5	177,393 66	32,439 10	18.28	80,875 15					123,365 23	62,334 82
1865–6	183,716 80	35,531 42	19.02	19,065 42	$3,607 00	$44,106 50			132,023 96	47,568 50
1866–7	336,409 36	41,233 95	11.95	88,525 78	266 50	10,300 00		330 62	268,573 45	64,345 94
1867–8	294,304 28	55,531 92	18.87	82,791 27	250,991 97	41,021 00		561 18	217,528 06	354,121 12
1868–9	287,890 53	52,130 77	18.11	38,779 83	262,323 13	32,338 00			212,532 07	310,213 27
1869–70	252,649 56	54,684 40	21.65	35,545 04	165,892 68	80,100 00			180,623 37	272,670 93
1870–1	148,917 03	37,782 65	25.37	53,693 31		35,258 00			96,097 20	73,914 13
1871–2	195,031 14	61,006 70	31.28	28,146 62		53,944 40			105,877 82	53,944 40
1872–3	190,330 47	69,858 63	36.50	78,776 28		32,293 20			91,042 59	80,640 23
1873–4	265,709 06	77,938 05	29.33	104,175 98	2,321 85	42,478 56	$34,070 00	6,344 01	166,150 23	168,769 62
1874–5	373,541 72	68,617 14	18.37	209,540 80	1,078 25	33,835 71	3,725 00	924 99	245,369 00	189,549 17
1875–6	372,078 74	65,976 57	17.73	162,000 25		40,802 70		565 47	249,450 44	146,716 69
1876–7	448,087 25	79,208 85	17.68	284,023 05		25,252 94	15,354 45		310,909 33	266,661 37
1877–8	446,516 82	84,326 72	18.88	112,628 95	4,803 38	38,214 40	82,068 79	1,665 88	285,521 50	162,712 80
1878–9	466,420 55	97,162 63	20.83	164,560 55	107,091 87	60,454 68	3,948 84	595 50	274,370 87	241,764 39
1879–80	427,687 56	100,667 57	23.53	141,022 14	309,652 90	51,675 28	1,173 50	2,510 53	240,414 91	419,429 27
1880–1	419,437 49	102,746 75	24.49	199,972 97	383,174 96	51,462 52		4,785 32	204,782 41	527,487 44
1881–2	455,005 64	104,255 15	22.91	86,102 58	92,804 98	48,743 45		4,320 00	249,919 90	131,140 42
	$5,858,975 94	$1,246,453 81		$2,037,825 79	$1,584,009 47	$722,281 34	$140,340 58 Balance in Treasury	$23,279 75	$3,726,449 73	$3,621,664 53
										104,785 20
										$3,726,449 73

NOTE.—May 1, 1872. Rates of dockage, tolls, wharfage, and rents were reduced fifty per cent by Act of Legislature.
On December 30, 1879, the rates on merchandise were reduced as follows, viz.: Twelve and one half to ten cents, six and one quarter to five cents; on lumber, from ten to five cents per one thousand feet; on coal, from ten to five cents per ton; on wood, from twelve and one half to five cents per cord. On June 4, 1880, the dockage rates were changed so that instead of the day of arrival and day of departure being charged for as full days the day was reckoned from the hour of arrival to the same hour on succeeding days.
Salaries of Wharfingers and Collectors were increased twenty-five per cent by Act of Legislature, approved March 19, 1878.

BALANCE SHEET.

From November 4, 1863, to June 30, 1882.

RECEIPTS.		
From dockage, tolls, wharfage, rent, etc		$5,858,975 94
DISBURSEMENTS.		
Salaries of Commissioners, Secretaries, Engineers, Attorney, law fees, Wharfingers, Collectors, fuel, rent, printing, and stationery	$1,246,453 81	
Construction of wharves, sheds, etc	2,037,825 79	
Seawall (construction of)	1,584,009 47	
Purchase of and constructing dredgers, tugs, and scows	140,340 58	
Dredging (cost of)	722,281 34	
Miscellaneous—Loss of merchandise by the breaking down of wharves	14,623 75	
Payroll—Crew of Fire Boat	8,655 99	
Cash in the treasury	104,785 20	
		$5,858,975 94
Dr. CASH.		
Amount remitted to the State Treasurer		$3,726,449 73
Cr. CASH.		
By amount drawn from State Treasurer	$3,621,664 53	
Cash on hand in the treasury	104,785 20	
		$3,726,449 73

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STATEMENT OF COST OF DREDGING.

Fiscal Year Ending—	Salary of Employes.	Repairs.	Coal.	Ship Chandlery and Water.	Miscellaneous, including Dock-ing Dredgers, Tugs, and Scows.	Total.	No. Yds. Dredged.	Worked No. Hours.	Cost per Cubic Yd. Cts.
June 30, 1875	$11,663 97	$10,362 99	$8,639 00	$1,386 64	$1,301 25	$33,835 71	303,429	2348¾	10.76-100
June 30, 1876	11,932 98	7,639 43	8,224 04	1,660 85	1,905 74	31,363 19	342,638	2634	9.15-100
June 30, 1877	11,980 99	4,041 44	5,971 71	1,582 10	1,676 79	25,253 03	280,197	2478½	9.1-100
June 30, 1879	17,183 80	7,372 48	7,764 86	2,666 37	3,032 55	38,214 40	423,654	3080	9.2-100
June 30, 1880	26,201 70	14,963 90	11,755 12	5,443 70	1,289 60	60,454 68	843,879	4694	7.16-100
June 30, 1881	27,202 59	8,824 19	11,115 11	4,184 65	318 75	51,645 29	749,011	4323	6.89-100
June 30, 1882	25,948 49	10,196 63	11,037 15	4,194 44	85 81	51,462 52	732,919	3962¼	7.2-100
	25,860 00	9,556 57	8,925 33	4,101 10	300 45	48,743 45	639,570	3639½	7.62-100

REPORT

OF

W. W. MORROW, ATTORNEY OF THE BOARD.

To the Honorable Board of State Harbor Commissioners:

GENTLEMEN: As Attorney for the Board of Harbor Commissioners, I herewith present my biennial report concerning the state of the litigation of the Board for the two years ending June 30, 1882.

The following statement gives the status of each case now in the hands of the Attorney of the Board, and also shows the disposition made of the matters pending in Court at the end of the period embraced in the preceding report:

The People of the State of California v. *The San Francisco Gaslight Company. No. 21695. Department Two.*

Action brought by the People, on the relation of the Board of State Harbor Commissioners, to recover $324 dockage at the Potrero Wharf.

The question involved in this case was the construction to be placed upon Sections 2524 and 2525 of the Political Code, with reference to the right of the Board to charge and collect dockage and wharfage upon wharves and docks constructed by private persons for private use, and not forming the outer half of an actual thoroughfare.

On April 22, 1878, an agreed statement of the case was filed. August twenty-third, cause submitted on briefs. December twenty-sixth, judgment for the plaintiffs. June 20, 1879, the defendants appealed to the Supreme Court. February 3, 1882, the cause was argued and submitted and briefs filed, before the Court in bank. March 30, 1882, the decision of the Court in bank was rendered, reversing the judgment, and remanding the case to the lower Court.

The opinion, declaring against the powers so claimed by the Board, was followed by the Supreme Court in a number of then pending cases involving the same proposition, and served as a basis upon which judgments were rendered in those actions adversely to the Board.

The cases with similar questions involved, and in which a judgment in one served as the predication of judgments in the others, were: *People, etc.*, v. *The San Francisco Gaslight Company* (two cases); *People, etc.*, v. *Pope & Talbot* (three cases); *Soule* v. *Pope;* and *People, etc.* v. *The Pacific Rolling Mills.*

The status of each is herein below enumerated.

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The People of the State of California v. *The San Francisco Gaslight Company. No. 4435. Department Two, Supreme Court.*

Action similar to 21695, Department Two, above, to recover wharfage, dockage, etc., at the Potrero Wharf, from 1874 to 1875. October 30, 1876, complaint filed. June 16, 1879, judgment in favor of defendant, and plaintiff's appeal to Supreme Court. Number in Supreme Court, 6667. Argued and submitted in Department Two of Supreme Court, February 3, 1882, and on March 30, 1882, the judgment and order of the lower Court were affirmed.

The People of the State of California v. *Pope & Talbot. No. 3324. Late Nineteenth District Court.*

Action to recover $392, wharfage, etc., on lumber landed by defendants, and for dockage on steamers at Second and Berry Street Wharf, in 1875.

March 17, 1875, complaint filed. January 25, 1878, judgment for defendants. July 24, 1878, plaintiffs appeal. January 20, 1881, cause argued and submitted. May 30, 1882, judgment and order affirmed.

The People of the State of California v. *Pope & Talbot. No. 4642. Late Nineteenth District Court.*

To recover $2,793 11, wharfage. Same cause of action as 3324 above. January 27, 1877, complaint filed. April twenty-sixth, answer filed. January fourteenth, cause tried and submitted. January twenty-fifth, judgment for defendants. March twelfth, a stipulation was filed that the judgment abide decision in the Supreme Court in case No. 3324, *ante*. As the case just referred to, 3324, was decided by the Supreme Court for the defendants, it follows that the judgment in this case is final.

The People of the State of California v. *Pope & Talbot. No. 36746, in the Justice's Court.*

Action to recover $57 50, dockage, etc. Same cause of action as 3850, *post*.

May 21, 1878, complaint filed and case continued indefinitely to abide decision in case No. 3324, *ante*, in which, as was subsequently shown, the judgment was adverse to the Board.

Samuel Soule v. *Pope & Talbot. No. 3850. Late Nineteenth District Court.*

To recover $924 50, wharfage, etc. Same cause of action as 3324, *ante*.

December 8, 1875, complaint filed. February 29, 1876, answer filed. September 20, 1877, case tried and submitted. January 25, 1878, judgment for defendants. March 12, 1878, stipulation filed that judgment abide decision in Supreme Court of case No. 3324, *ante*. This case is therefore closed in favor of defendant.

The People of the State of California v. *The Pacific Rolling Mills. No. 5954. Late Nineteenth District Court.*

To recover wharfage on certain coal and iron, landed at defendant's wharf at the Potrero.

May 2, 1878, cause was submitted on agreed statement. December 29, 1879, judgment for defendants. December thirty-first, case appealed.

This case was argued before the Supreme Court, February twenty-third and twenty-fourth, 1882, and submitted, and on March twenty-ninth the judgment of the lower Court was affirmed.

The People of the State of California v. *Henry F. Williams et al. No. 5174. Late Nineteenth District Court.*

To recover $114 25. This is an agreed case to determine the right of the Board to collect dockage, wharfage, and tolls in Channel Street, on the south side of Block 17. The case was argued October 12, 1877, and decided in favor of the defendant December 22, 1879.

The plaintiffs appealed, and the case is still pending on the calendar of the Supreme Court.

The People of the State of California v. *C. L. Dingley. No. 28960. In Justice's Court.*

The complaint was filed February 15, 1877, and further proceedings were suspended by consent of counsel, to abide by the decision of the Supreme Court in the case of *The People, etc.* v. *Henry F. Williams et al.*

The Pacific Transfer Company v. *Wm. Blanding et al. No. 23366. Department Six. Late Fourth District Court.*

To recover money paid under protest for wharfage by plaintiffs to defendants.

October 24, 1879, complaint filed, and cause placed at issue January 10, 1881. The case is still pending trial on the calendar of the Supreme Court.

The People of the State of California v. *Turner, Kennedy & Shaw. No. 30557. Justice's Court.*

To recover $213 50, wharfage.

Complaint filed May 18, 1877, and issue joined June 9, 1877. April 8, 1879, papers transmitted to the late Twelfth District Court. This cause has never been disposed of.

The People of the State of California v. *Turner, Kennedy & Shaw. No. 28969. In Justice's Court.*

To recover $149, wharfage.

Complaint filed February 15, 1877, and issue joined on the twenty-fourth. The cause was certified to the late Twelfth District Court, and is still pending.

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The People of the State of California v. *F. S. Malone and L. Quint. No. 36984. In Justice's Court.*

To recover $212 87 from defendants as sureties on bond of Nat. Boyce as Wharfinger.

Complaint filed June 3, 1878, and the case is still pending.

The People of the State of California v. *Silas Caulkins et al. No. 22220. Late Fourth District Court.*

Suit upon the bond of Caulkins as Wharfinger for money received and not paid over.

May 6, 1878, complaint filed, and on October eleventh, judgment for $1,455 46 was entered in favor of plaintiffs and against defendants. May 7, 1881, the judgment was docketed against the defendants in the Counties of San Francisco, Sacramento, and Colusa. The judgment has never been satisfied.

William Blanding et al. v. *The Barkentine "Victor." No. 2345. In United States District Court.*

A libel for dockage in China Basin. Still pending and awaiting hearing.

Samuel Soule et al. v. *Benjamin Holliday, Jr. No. 2631. In late Nineteenth District Court.*

Complaint filed May 18, 1874. May 11, 1877, the defendants filed a demurrer, which is still undisposed of, in Department Seven of the Superior Court.

The People of the State of California v. *Thomas R. Huson et al. No. 22221. Late Fourth District Court.*

May 6, 1878, complaint was filed seeking recovery on defendant's bond as Wharfinger. August fifteenth, answer filed. September twenty-fourth, judgment for defendants. November tenth, plaintiffs move for a new trial. May 5, 1880, motion denied. May 21, 1880, plaintiffs appeal to the Supreme Court, where the case has not, as yet, been reached upon the calendar.

William Blanding et al. v. *Smith & Smith et al. No. 22545. Department Seven. Late Fourth District Court.*

To recover one thousand dollars upon a bond guaranteeing an asphaltum contract and its due performance.

Complaint filed September 28, 1878. Demurrer filed October 31, 1878, and overruled. Answer filed July 12, 1879. Caused assigned to Department Seven, of the Superior Court, and is now on the calendar awaiting trial.

C. A. Hooper et al. v. *E. P. Swett. No. 6618. Department Four. Late Nineteenth District Court.*

Action to restrain defendants from driving piles or building a wharf in Channel Street, under a contract from the Board.

Complaint filed December 28, 1878. January 14, 1879, the Board of State Harbor Commissioners filed intervention. August 9, 1880, case tried and submitted. September twenty-fourth, cause decided in favor of defendant, thereby establishing jurisdiction of the Board in Channel Street. Plaintiffs moved for a new trial, which was denied May 19, 1882. July 18, 1882, plaintiffs appeal to the Supreme Court. Appeal still pending.

The People of the State of California v. *Thomas Boyce. No. 1389. In Justice's Court.*

To recover the price of certain condemned hose, sold to the defendant.

July 22, 1880, complaint filed. August second, judgment for plaintiff for $160 75. August 3, 1880, execution was issued, and levy made upon certain property of the defendant.

November 23, 1880, amount realized on execution was $55 30, and the same turned over to the Board.

The People of the State of California v. *Potrero and Bay View Railroad Company. No. 80. Department Three, Superior Court.*

Action to declare certain piles and a bridge built by the defendant in and over Islais Creek a nuisance, and to have the same abated.

January 14, 1880, complaint filed. February third, demurrer filed. February twentieth, demurrer overruled. November 16, 1881, answer received. Cause tried before the Court December sixth, seventh, eighth, twelfth, and thirteenth, 1881, and submitted. January 30, 1882, decision for plaintiff.

February 10, 1882, notice of intention to move for a new trial served and filed.

The proposed statement on the motion has been received, and plaintiff's amendments have been offered thereto. The papers, statement, and amendments, have been submitted to the Judge of said Department for settlement, and the motion for new trial is, therefore, still undecided.

The People of the State of California v. *Nicholas Luning et al. No. 2864. Department Eight.*

Action to condemn, for seawall and thoroughfare, certain part of Block Number Thirteen, in the City and County of San Francisco.

Complaint filed November 30, 1880. January 10, 1881, demurrer filed. November 18, 1881, demurrer overruled. December 13, 1881, answer received. The cause is now on the calendar of Department Eight, awaiting trial.

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The People of the State of California ex rel. John Hackett, v. *William Blanding et al. No. 4087. Department Seven.*

Action to restrain the Board of State Harbor Commissioners from carrying on certain dredging operations.

Complaint filed April 23, 1881. May 21, 1881, answer filed. A restraining order was granted upon the filing of the complaint, and on June seventh, defendants served and filed notice of motion to dissolve the injunction and restraining order. The motion was argued and submitted on the tenth, and on the fifteenth the restraining order was by order dissolved. July 12, 1881, plaintiffs appealed to the Supreme Court, where the cause is now pending.

The People of the State of California v. *West Evans et al. No. 3150. Department Six.*

Action to recover $455 53 from defendant and his bondsmen for moneys received as Wharfinger, and not paid over.

September 13, 1881, complaint filed. November 16, 1881, demurrer filed. November twenty-first, demurrer overruled. December eighth, answer received. January 23, 1882, cause tried before a jury, and judgment of nonsuit rendered.

This case was then abandoned, and a new action commenced, in order to obviate the objections raised by the decision of nonsuit.

The People of the State of California v. *Robert G. Bixbee et al. No. 6251. Department Eight.*

Same cause of action as No. 5150, *ante*.

February 10, 1882, complaint filed. February twentieth, demurrer filed. March tenth, demurrer argued and overruled. March eighteenth, answer received. April tenth, defendants demand jury, and the cause is transferred from Department Three to Department Eight. The case is now on the calendar of Department Eight, awaiting trial.

Respectfully submitted.

WM. W. MORROW,

Attorney for the Board of State Harbor Commissioners.

O

REPORT

OF THE

BOARD OF ENGINEERS

APPOINTED TO

Examine into the Matter of the Measurement of Materials

USED IN THE CONSTRUCTION OF THE

SEA-WALL AND EMBANKMENT AT SAN FRANCISCO.

ADDRESSED TO

HIS EXCELLENCY GEORGE C. PERKINS,

Governor of California.

SIGNED BY

WM. HAM. HALL, State Engineer; CALVIN BROWN, C. E.; FRANK SOULE, Jr.

San Francisco, January 20, 1882.

SACRAMENTO:

STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.

1882.

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LETTER OF INSTRUCTION.

Messrs. Wm. Ham. Hall, State Engineer,
Frank Soule, Jr., C. E., Calvin Brown, C. E.:

GENTLEMEN: Your attention is called to a report bearing date of June 14, 1881, made by Mr. Lauren E. Crane, an expert accountant authorized by me to inquire into the affairs of the State Board of Harbor Commissioners, wherein it appears that the quantity of materials paid for as having been placed in the sea-wall and embankment have greatly exceeded the amounts originally estimated as being necessary for the construction. You will consider this report and the data from which it has been made, so far as relates to the subject of the sea-wall, and conduct examinations as follows:

I. An examination of the engineering records of the Harbor Commission, and an inquiry into the method of measurement of material placed in the sea-wall and embankment, to be made with the view of forming an opinion as to whether or not the interests of the State have been properly guarded in the matter of estimating quantities upon which payments have been made; and as to whether it is possible or probable that payment has been made for more material than was actually used in the construction.

II. An examination of the sea-wall and embankment, to be made with the view of determining whether the material in place, used in construction, can or cannot be measured, and, if it can, at what cost; and with a view of forming an opinion as to whether or not the amount of material recorded and paid for as used in the construction was actually delivered and deposited in place.

You will at once proceed to the conduct of the examination and report the results thereof, together with your joint or several opinions on the points referred to and the whole subject-matter, as soon as a fair conclusion can be arrived at.

I have the honor to remain, your obedient servant,

(Signed.) GEORGE C. PERKINS,
Governor.

NOTE.—Verbal instructions, subsequently received, practically limited the work of the Board of Engineers to the first line of investigations, seeing that an examination of the wall and embankment, such as would have answered an useful purpose under the second specification, could not be made with the fund which it was possible for the Executive to command for the work.

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REPORT.

His Excellency GEORGE C. PERKINS, *Governor of California:*

SIR: We, the undersigned, appointed as a Board to examine into and report to you upon the matter of the construction of the San Francisco sea-wall and embankment, respectfully announce that we have concluded our investigation, so far as we feel justified in going in accordance with your original letter of instruction, dated September 1, 1881, and your reply to our communication under date of ———, and we now submit this report as the outcome of our labors.

It will, of course, be understood that we have by no means occupied all of the time since entering upon this work of inquiry in its prosecution. Aside from the fact that each of us has necessarily been, in a great degree, tied down to other duties which, by virtue of our positions, have demanded attention, and, of course, have interfered with the rapid progress of this special work, the nature of the work itself did not admit of our close application to it, without ourselves undertaking duties which might more cheaply have been performed by others. Indeed, as has been proven, our desire at first to make the expense as light as possible, has led us to the execution of work which might better have been done by an engineering clerical assistant. This, perhaps, was unavoidable, however, for at the outset we had little conception of the labor before us necessary to arrive at a fair ground-work for a report; and looking over the mass of notes which we have made, we are sensible that much has been for naught, and that our report will represent on its face but a tithe of the work which has led up to it.

The Board of Harbor Commissioners has extended to us every facility we have asked for in the furtherance of our work, and the members have been cordial in their support of our efforts. At your request, presented by ourselves, the Commission caused a resurvey of the sea-wall to be made, and at the suggestion of their Chief Engineer, the work was done under the immediate supervision of an engineer nominated by us.

The engineering records of the Board have been fully open to our inspection, we believe, and members of the engineer department have rendered us much assistance in their examination.

It is to be regretted that the former Chief Engineer of the work, under whom the sea-wall was commenced, and according to whose specifications it was constructed, is absent from the State, so that much information, which we have only arrived at by a very slow process, might have been imparted to us at once by him.

Our difficulty has been, sometimes, to decipher illegible and incomplete records; at others, to collate data to which there was no

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key nor index; oftentimes, to ascertain as between conflicting data, which memoranda were the most reliable; and, in short, to find what notes there were in existence relating to subjects for inquiry.

This, perhaps, was unavoidable, seeing that the present Chief Engineer was not in charge of the work prior to March 24, 1880, and not familiar with its conduct.

This condition of affairs has resulted in double work; in hesitation and time consumed in consultation; and again in opening up what might be called *blind leads* for investigation.

We have made extended search for engineering authorities and precedents on obscure points which have come up for discussion; but always with a consumption of time and labor.

We are careful to mention these circumstances, for it may seem that we have been slow in presenting our conclusions; and in justice to ourselves and our subject we could not leave them unnoticed.

We cannot say that we are satisfied with the insight we have had into the subject. There are a number of experiments and examinations which might have been made to throw light on obscure points, but which we could not undertake on account of expense involved.

A description of the sea-wall, a history or condensed journal of the work of its construction, with much other data hereinafter to be referred to, will be found in appendices to this report.

We have had before us the report of Mr. L. E. Crane, to which you specially called our attention, and which we refer to towards the close of this paper. Mr. Crane has personally been at pains to render us some assistance in our work.

We have also had before us a written and printed statement of Mr. Wm. Blanding, President of the Harbor Commission, addressed to your Excellency, under date of November 20, 1881; a printed open letter from Mr. Isaac W. Smith, former Chief Engineer of the sea-wall work, under date of June 28, 1881, addressed to the Harbor Commission, from New Tecoma, Washington Territory; and a printed report of Mr. F. A. Bishop, present Chief Engineer of the sea-wall work, addressed to the Board of Harbor Commissioners, under date of August 1, 1881, all referring to the subject in reply to Mr. Crane, or adverting to points raised by him. These we have considered as part of the evidence before us, and we refer to them briefly by name herein.

The situation was as follows: Mr. Crane, an expert accountant, reported to your Excellency, upon an official examination of the records in the Harbor Commissioners' office, he discovered that the final results upon which payment had been made for material delivered by the cubic yard in the construction of the sea-wall and embankment, generally overran the preliminary estimates, in some cases to a very considerable degree, and, under the circumstances, to him in an unaccountable manner, except upon the supposition that there had been wrong doing in accounting for the work.

We received from your Excellency a letter of instruction of which a copy precedes this report. Upon its receipt we proceeded with the investigation, and under it we have acted.

We now take up the important points in the case, leaving the narrative of our work to be submitted, if desired, in an appendix.

"THE CUBIC YARD MEASURED IN THE EMBANKMENT."

As a matter of course, in this investigation the objective point has been a just knowledge of the quantity of material of the several kinds which was actually put into the work under each contract. For obvious reasons, it was necessary to have this knowledge in terms of the unit of space (the cubic yard) filled in the sea-wall and embankment. Hence the first point to determine was, how much space in the embankment or wall would the material, as measured in the vehicle, have filled. There seems to have been a general understanding that the cubic yard of the contracts was the cubic yard of space in the vehicle of transportation filled with material as it would there rest under the conditions of loading. If, however, there has been an exact understanding on the part of those managing this work of the difference of condition between loose material in a car or cart and firmly compacted material in an immense embankment, such as they have built, it certainly has not been made manifest, either in the engineering operations of the direction and supervision of the work, the statements on the outcome written in answer to Mr. Crane's report, or the replies made to our inquiries.

The general proposition, that the cubic yard of stone, or of earth (sand), paid for in the vehicle, might not have filled, and probably did not fill a cubic yard of space in the wall or embankment, is mentioned by Mr. Blanding of the Harbor Commission, in his letter addressed to your Excellency and submitted to this Board. Mr. Blanding (writing under date of November 20, 1881), in setting forth the probable reasons for the excess of results over maximum estimates, specifies, amongst others, the "packing of the dry earth and sand by water (it) thus being decreased in volume in the embankment;" and again, the "compacting of the earth and sand in the embankment." These statements are plain and to the point, but they are only general suppositions on the part of one of the business managers of the work, and not definite allowances made upon precedent by either of the engineers in charge.

Mr. Smith, in his letter to the Harbor Commissioners, already referred to, speaking of the difference between the estimates and the results says: "For the existence of this difference I do not attempt to account, but I attribute it, in part at least, *to the nature of the materials.*" (The italics are ours.) This expression may be taken as an indication that he realized the fact that the materials as measured, on account of their "nature," would not fill the same space in the embankment or wall as in the vehicle of transportation and measurement, but he makes no more definite mention of the point, although he dwells upon other points, such as the uncertain nature of the foundation of the wall, the spread of material in the slopes beyond the planes of the estimates, and the loss of material by wave and current effects.

Mr. Bishop, in his report to the Harbor Commission, heretofore mentioned, in explaining why the results generally exceeded the estimates under the contracts for the several sections of the sea-wall work, also makes special mention of the points explicitly set forth in Mr. Smith's letter, but says nothing of the probable difference between the space filled by material in the vehicle and by the same material in the wall.

A memorandum made for guidance of bidders upon the cross sec-

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tional diagrams of Section 1 of the work, considered, with certain reservations, as part of the specifications, says: "A cubic yard of stone in the quarry will probably make 1.7 cubic yards in the embankment." But no mention is made, so far as we have been able to learn, in any record, of how much material in the vehicle of delivery it would take to make the cubic yard in the embankment.

Certainly, if the Harbor Commissioners contracted for material in a loose state in the vehicle of delivery, it was all right that it should be paid for in that state; but a general understanding of the fact that there would be a very considerable difference between the measure paid for and the measure of result in the embankment, would, we think, have saved much misunderstanding of the outcome.

THE MATERIALS.

The stone used in the construction of the wall constituting the outer portion of the embankment taken as a whole, came from the adjacent quarry on the north and east face of Telegraph Hill.

With respect to the nature of this material, the form in which it was to be laid on the outer face, the required size of the masses, and method of deposition, the specifications for Sections 2, 3, 4, and A contain stipulations as quoted in a description of the work submitted in an appendix hereto. The specifications for Section 1 differ materially in this respect from those for the others, only in the greater depth (eight feet) to which the larger stone was to be deposited on the upper face of the wall.

The facts as we learn by inquiry, are:

First—The outer facing of the wall was built of stone ranging in size from one cubic foot to ten cubic feet in content, a large portion of which, as may be partially seen on the face of the wall at low tide, ranging from two to five cubic feet in content; and these for three feet in depth from the surface and above low tide level, were hand laid.

Second—The material used in the body of the structure ranged in size from one to two cubic feet down to that of small broken stone, such as used for macadamizing roads or streets.

DELIVERY OF MATERIAL.

Stone.—This material was transported and measured in the several sections of the work as shown approximately by the following table:

Section 1.	In cars rated at 4.00 cubic yards each In cars rated at 4.25 cubic yards each In cars rated at 4.50 cubic yards each In cars rated at 5.00 cubic yards each	108,365 cubic yards.
Section 2.	In cars rated at 4.21 cubic yards each	130,739 cubic yards.
	In wagons rated at 1.76 cubic yards each	12,000 cubic yards.
		142,739 cubic yards.
Section 3.	In cars rated at 4.25 cubic yards each	180,312 cubic yards.
	In carts rated at 1.00 cubic yard each	7,600 cubic yards.
		187,912 cubic yards.
Section 4.	In carts rated at 1.00 cubic yard each	182,986 cubic yards.
Section A.	In carts rated at 1.00 cubic yard each	73,793 cubic yards.

Earth.—The soil and defective or soft stone from the quarry, and the quarry scrapings generally, and somewhat similar materials brought from other points at greater distances in wagons, were put into the work as *earth* in the embankment behind the stone wall.

But the great mass of the material which was used in this portion of the structure was the sea sand from the dunes in the neighborhood of Black Point Military Reservation. This material ("earth"—sand, soil, soft rock, etc.) was transported and measured in the several sections of the work, as shown by the following table:

Section 1.	In cars rated at 5.00 cubic yards each—sand In cars rated at 4.00 cubic yards each—earth	100,298 cubic yards.
Section 2.	In cars rated at 4.21 cubic yards each	131,352 cubic yards.
	In wagons rated at 1.76 cubic yards each—earth	26,000 cubic yards.
		157,352 cubic yards.
Section 1. Widening.	In cars rated at 4.00 cubic yards each In cars rated at 4.25 cubic yards each In cars rated at 5.00 cubic yards each	222,175 cubic yards.
	In carts rated at 1.00 cubic yard each	10,706 cubic yards.
		332,881 cubic yards.
Section 2. Widening.	In cars rated at 4.00 cubic yards each In cars rated at 4.25 cubic yards each In cars rated at 5.00 cubic yards each In cars rated at 5.25 cubic yards each	136,920 cubic yards.
	In carts rated at 1.00 cubic yard each	30,992 cubic yards.
		167,912 cubic yards.
Section 3.	In cars rated at 4.00 cubic yards each In cars rated at 5.00 cubic yards each	120,890 cubic yards.
	In carts rated at 1.00 cubic yard each	108,375 cubic yards.
		229,265 cubic yards.
Section 4.	In cars rated at 5.00 cubic yards each	171,873 cubic yards.
	In carts rated at 1.00 cubic yard each	63,297 cubic yards.
		235,170 cubic yards.
Section A.	In cars rated at 5.00 cubic yards each	95,800 cubic yards.
	In carts rated at 1.00 cubic yard each	27,967 cubic yards.
		123,767 cubic yards.

THE EFFECT OF CAR AND CART MEASUREMENT.

The vehicles of transportation were measured as loaded with a fairly heaped-up load, shaped into a regular form for convenience of measurement. A number of measurements were made, as elsewhere in this report spoken of more in detail, and the mean of the results taken as the average load in each case of the several classes of vehicles. It was the duty of the tally clerks and the supervisor of construction to see that the loads daily delivered corresponded in apparent volume with those of the specimen or sample loads measured.

We ask your attention first to the effect which this mode of measurement probably had upon the outcomes of the stone work, as compared with the estimates.

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MEASUREMENT OF STONE.

GENERAL CONSIDERATIONS.

Solid stone, when quarried, broken into fragments, and piled, occupies a space greater than that from which it came, in degree varying with, first, the size of the individual pieces; second, the comparative regularity in size of the pieces composing the mass; third, the care with which the piling is accomplished; and, fourth, the volume of the mass piled.

The reason for the first qualification is evident, when we reflect that the stone in place has no void spaces, and that the larger the individual stones in the piled up heap, the nearer they approach the condition of the unquarried mass, and consequently the less void space in proportion to solid is embraced.

The reason for the second qualification is apparent, when we reflect, that if stones were properly graded in size, and in the right proportion as to quantity, the voids between the larger pieces could be filled by those of the next smaller size, and so on down *ad infinitum*. Hence, other conditions being equal, in a pile of broken stones of uniform size there is a maximum amount of voids and a minimum amount of solid matter, as compared to other masses composed of stones of varying size.

The reason for the third qualification is apparent when we reflect that, by careful piling, the angles of each stone may be made to fit into the spaces between others; whereas, in a pile of stones not so laid, this accommodation of the pieces to each other is attained in a much less degree. Hence, carefully piled masses of broken stone contain much less proportion of void space than those loosely laid.

The reason for the fourth qualification is evident, when we reflect, first, that if the mass of stone is upon a plane surface and surrounded by similar planes (such as compose the bottom and sides of a cart or car, for instance,) to which planes the measurements are made, the open spaces between the stones and the sides and bottom planes—unfilled by other adjacent pieces fitting into the voids—may, if the mass be small, constitute a large portion of the whole bulk, whereas, if it be great, the proportion, according to the size of the stones, may be insignificant; and, second, in the small mass there is no adequate superincumbent load to force consolidation; whereas, in the large mass there is such weight. Hence, (1) the smaller the pile of broken stone, the greater proportionate error there is in measuring to fixed planes surrounding it, and (2) the more loose and open will be its condition, other things, of course, being equal.

These considerations all have their application in this case, as will presently be seen from the following deductions:

(*a*) The proportion of void space to solid matter in a cart-load of large stones, such as was put on the outer face of the sea-wall, to a thickness of from five and one half to eight and one half feet, is much greater in the small mass of the cart load than in the large mass of the wall; and, in a less degree, the same is true in the case of all material transported as stone, because of the first reason for the fourth qualification just explained. And, again, for the reason that in the cart it was carelessly piled, while in the embankment, at least a considerable portion of it was, under the specifications, laid in by hand. What is true with respect to the measurement of this material in carts is, of course, true, only in a less degree, with respect to its measurements in the somewhat larger car.

(*b*) The proportion of void space to solid matter in a cart, car, or wagon-load of all the stone so measured and transported, is much greater than in the larger mass of the same material in the embankment, for the second reason above given under the fourth qualification.

(*c*) The proportion of void space to solid matter in the loads of rock, as usually loaded and transported for works of this kind, is much greater than the resulting void space in the embankment, because of the reason for the second qualification above given.

There are four reasons therefore why the rock material as measured in the vehicle, would not occupy as great space in the embankment, as in the box of measurement.

(*1*) The large stone could not be put in the same box, even if an attempt were made to pack them, without a greater proportion of void space than in the embankment, because the sides and bottoms of the measuring vehicles would not admit of their adjustment to fit well together.

(*2*) The larger mass of the embankment settles more compactly and firmly within itself by reason of its weight, than the smaller mass of the load.

(*3*) The small stones in the embankment enter the voids between the larger ones, and makes a more compact body; whereas in works of this kind—and we have no reason to regard this as an exception—the contractor, for convenience of handling his material, working his bank, and using his men and teams to advantage, invariably loads some carts with the larger pieces put in by mechanical power, others with smaller pieces put in by one or two men, and others still, with the smallest material thrown in by the shovelers; so that the loads of larger pieces have not the benefit of the smaller pieces to fill their voids.

(*4*) The material is more carefully adjusted or piled in the wall than in the vehicle, for the pieces have opportunity to find their bearings, and a portion of the work is hand piled.

MEASUREMENT OF STONE—THE PRESENT CASE.

The facts are that a considerable quantity of large stone was transported and measured under conditions where there must have been, in the carts, at least, 55 per cent. of void space below the planes to which the tops of the loads came; and in all material transported and measured in carts, as stone, the conditions were such as to warrant the conclusion that the percentage of void space between the pieces of stone constituting the load and the bed, sides, and bottom, of the cartbed, and between the pieces themselves, must have been at least 50 per cent. or one half the volume of the load.

Again, the larger stone placed in this work, as the facing of the wall for five to eight feet in thickness, and partly hand laid, probably rests in such state with about 36 per cent. of voids; and the great mass of material constituting the body of the stone wall—varying in size as before explained—rests with about 41 per cent. of void

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space between the pieces except where filled with mud from the bottom, or sand from the side dumping.

Without, at this point, adopting any ratio for correction, we call your attention to the facts that:

Where material, resting in cartbeds with 55 per cent. of void spaces, is placed in embankment with 36 per cent. of void, the loss of efficiency is 29.6 per cent. of the bulk in the loads.

Where the voids in the cart load constitute 50 per cent. of the volume, and in the embankment 36 per cent., the loss of efficiency is 18.74 per cent. of the bulk in the loads.

And where the voids in the cart load constitute 50 per cent. of the volume, and in the embankment 41 per cent., the loss of efficiency is 15.2 per cent. of the bulk in the loads.

We have ample engineering authority and precedent for the adoption of these figures as representing (with some corrections for circumstances not yet discussed) the true state of this case, past and present, with which, also, the result of our own experience and observation is in accord; but there is a case in point whose lesson is specially applicable herein, and to this we now ask your attention.

MEASUREMENT OF STONE—A CASE IN POINT.

With the view of forming a conclusion as to the correctness of the measure of material delivered upon the sea-wall by the cart load, the Board applied to Colonel Mendell, United States Engineer in charge of the training wall work at Oakland, for data concerning the results of his operations.

The material for this work is paid for by the ton (2240 pounds); hence it is weighed, and thus accurately gauged by the scow load, by displacement of the water—the lighters having previously been gauged with loads that were weighed on hay scales by the cart load.

The results of this work for three months were furnished by Colonel Mendell as follows:

Upon this work 23,644 cart loads of rock weighed 22,061.7 tons of 2,240 pounds each; which would make 0.933 ton, or 2,090 pounds per cart load.

According to definite tests made by Col. Mendell, this material weighs on the average 165 pounds per cubic foot, which is confirmed by experiments made by one of the members of this Board. At this rate each cart load contained on the average 12.66 cubic feet of solid stone. This is the result of a long extended trial, with rock of the same class as that put into the sea-wall.

The hauling was done under contract by the ton, so that it was to the contractor's interest to make the average load as heavy as his animals could manage without over fatigue or strain. The contractor's draught animals, as repeatedly remarked by this Board, are unusually powerful and efficient for use on this class of work, and the carts used were of the largest size and in good condition, with side boards to increase their capacity. In fact this same outfit was, in part at least, employed on the later contracts upon the sea-wall work.

Under these circumstances we feel justified in assuming that the average cart load of rock delivered upon the sea-wall did not weigh over 2090 pounds, that it did not contain over 12.66 cubic feet of solid stone.

According to the measurements of the engineers and the reports of the supervisors of construction, the top surface of each such cart load came up to a plane between which and the bottom and sides of the cart bed there were twenty-seven cubic feet (one cubic yard) of space.

This being the case, the average cart load contained 12.66 cubic feet of solid rock, and 14.34 cubic feet of void space between the pieces individually, and between them and the cart bottom and sides; or, 47 per cent. of solid and 53 per cent. of void.

The former Chief Engineer of the work, who drew the specifications for the construction, as we have before remarked, entered upon the cross sectional drawings a memorandum to the effect that one cubic yard of stone in place would probably make 1.7 cubic yards of embankment; which is equivalent to saying that the embankment would consist of 41 per cent. of void space and 59 per cent. of solid stone—supposing the stone in the quarry to have been compact. These figures agree with general experience as recorded; they are about the average of the results in a number of examples which we have examined, and are given as a fair average by Mr. Trautwine in his "Engineers' Pocket-book."

For example, taking them as correct, we would have an embankment with 59 per cent. of solid matter and 41 per cent. of void space, made by dumping cart loads which contained 47 per cent. of solid matter and 53 per cent. of void space. In this case, the cart load measuring apparently twenty-seven cubic feet (one cubic yard), would fill but 21.46 cubic feet of space in the embankment, which result would represent a loss of 5.54 cubic feet of bulk or 20½ per cent. of its volume in the cart.

MEASUREMENT OF STONE—CONCLUSIONS.

For reasons heretofore given, viz.: First, the great range in size of stone used in the body of the wall; second, the large size of stone used on the face of the structure; third, the fact that these were, in a measure, hand laid; and fourth, the fact that small stones were used in filling the voids between these larger ones, we are of the opinion that (A) in the body of the wall, as constructed, the void space does not exceed 41 per cent. of the bulk, and (B) in the outside facing, as laid and served with a filling of finer material, the void space does not exceed 36 per cent. of the bulk, or (C) an average of 40 per cent. for the entire rock work, taking into consideration the approximate relative volumes of the two classes of work.

We base our opinion upon a close study of the circumstances and results of the recorded examples above referred to, as well as upon the circumstances of the work and character of the material employed on the sea-wall.

Furthermore, we are of the opinion that much of the material (stone) transported in carts, rested therein with 55 per cent. of void space; that the larger portion of it, as measured in the cart-beds, contained 50 per cent. of void space, and that a fair average—taking into consideration the relative volumes of matter, of the two classes and other things as well, would be about 52 per cent. of void to 48 per cent. of solid matter.

And finally, that there would be a substantial difference between the proportion of voids existing in the cart loads and in the car loads, particularly in the case of the larger rocks used for the facing.

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From our consideration of this point, we are of opinion that large stone carried in cars in loads of four to five cubic yards, has about 50 per cent. of void in the gross bulk, and the assorted stone has about 47 per cent. of void space; and that a fair average for the whole transported and delivered in this work, taking into consideration the relative amounts of each class, would be about 48 per cent. of void and 52 per cent. of solid matter in the space measured as a load.

RECAPITULATION.

		Void.	Solid.
	Condition of Material in Wall.		
Our opinion:	Body of wall	41 per cent.	59 per cent.
	Outside facing	36 per cent.	64 per cent.
	Average for whole	40 per cent.	60 per cent.
	Condition of Material in Carts.		
Our opinion:	Assorted material	50 per cent.	50 per cent.
	Large material	55 per cent.	45 per cent.
	Average of whole	52 per cent.	48 per cent.
	Condition of Material in Cars.		
Our opinion:	Assorted material	47 per cent.	53 per cent.
	Large material	50 per cent.	50 per cent.
	Average of whole	48 per cent.	52 per cent.

Upon this basis, where the rock was transported in carts, a wall having on the average 40 per cent. of void space and 60 per cent. of solid matter, was built with measured loads having 52 per cent. of void space and 48 per cent. of solid matter, in which case the space occupied by the material in the embankment would be 20 per cent. less than in the vehicle where measured.

And again, where the rock was transported in cars, a wall having on the average 40 per cent. of void space and 60 per cent. of solid matter, was built with measured loads having 48 per cent. of void space and 52 per cent. of solid matter; in which case the space occupied by the material in the embankment would be 13.33 per cent. less than in the vehicle where measured.

MEASUREMENT OF EARTH.

GENERAL CONSIDERATIONS.

We now come to a definite consideration of the question, as to how much space the cubic yard of material measured in the vehicles and delivered and deposited as earth would fill in the embankment. The general proposition from which we may derive a rule applicable in this case is stated by Gilmore in his work on "Roads, Streets, and Pavements," as follows:

> The growth or augmentation (in bulk) of freshly dug earth varies from 15 to 25 per cent., but where formed and compacted into embankments it shrinks again to less than its original bulk. This shrinkage is approximately as follows:
>
> | | |
> |---|---|
> | In gravel or sand | 8 per cent. |
> | In clay | 10 per cent. |
> | In loam | 12 per cent. |
> | In loose garden soil | 15 per cent. |

Vose, in his "Manual for Railroad Engineers," lays down the same general proposition as to the augmentation of earth in bulk when dug, and subsequent shrinkage below original bulk when placed in embankments and made to consolidate anew; and he puts the rate of this consolidation as follows:

In gravel	8 per cent.
In gravel and sand	9 per cent.
In clay and clay earths	10 per cent.
In loams and sandy earths	12 per cent.

Other authors, also recognized as authority generally by engineers, have adopted about the same figures. Definite examples cited by some of them substantiate their conclusions, and engineers generally, so far as we are informed, have found them to correspond with results observed in their practice. For instance, Trautwine cites a case where wet sand filled into a box, such as a cart or car bed, was reduced, by ramming, one third of its bulk, or 33⅓ per cent.; whereas wet sand simply shaken down as much as possible in a box and not rammed, is reduced only 10 per cent. of its bulk.

MEASUREMENT OF EARTH—THE PRESENT CASE, AND CONCLUSION.

The sand used as earth in the construction of the sea-wall embankment was loaded into cars with a steampower scoop. The scoopful, to the surface of the sand as ordinarily heaped up when fairly filled, measured 2⅝ cubic yards. The scoop was filled by scraping it upward along the face of a sand bank, and through the fallen mass at its foot.

Loaded in this way, and of this material, we are of the opinion that the mass of sand resting in the car was in a condition which caused it to occupy about 20 per cent. greater space than it did, before being disturbed, in the deposit from whence it was taken.

From the engineer's reports and notes, and from the statements made to this Board by those connected with the work, some of whom have been engaged upon it from its commencement, a number of car loads were measured at the dump, and according to these measurements, they averaged about five cubic yards per car. For cars of this size, all loads were made by inspection to correspond to this dimension. We are informed by the engineers in charge, that the cars were uniformly loaded with two scoopfuls of sand, namely, on the average 5¼ cubic yards.

Now, if this mass had settled to five cubic yards in bulk on arriving at the dump, it had lost about 5 per cent. of its bulk by settlement on the road. Hence, we assume that the sand material delivered as earth, rested in the cars at the dump with only that degree of compactness which would make the cubic yard as measured represent 14 per cent. more volume than in the natural deposit.

Taking the figure for shrinkage in the new embankment, given by the authorities, and, which we think applicable under the circumstances, namely, 9 per cent., we then find that the cubic yard in the car would shrink back to its original bulk, 14 per cent., and also 9 per cent. of that bulk in addition, or in all 20 per cent. of the bulk in car, when placed in the sea-wall embankment and consolidated.

On some of the sections of the work a considerable portion of the material used as earth was quarry strippings and scrapings, earth,

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decomposing rock, clay, and loam soils. A portion of this was transported and measured in cars, at the rate of 4 to 4.25 cubic yards per car (the cars smaller than those used for sand, being those employed at other times for rock); but the larger portion was hauled in wagons and carts from excavations being made by the contractor in grading lots or streets in the neighborhood.

In our opinion this class of material will (1) agument 25 per cent. of its original bulk in the process of excavation and loading into the vehicles; and (2), by shaking in transportation it will diminish so as to occupy in the vehicle bed about 22 per cent. greater space than in the cut from whence taken; and (3), finally by consolidation in the embankment it will shrink into 10 per cent. less space than it occupied in the deposits from whence taken.

Upon these data it will be seen that each cubic yard of this material delivered and measured in the vehicle of transportation, filled 0.74 cubic yard of space in the embankment after consolidation, having lost 26 per cent. of its volume as measured.

We have made no distinction in this case as between loading in carts or wagons and in cars, as we did in the case of rock, for the reason that the condition of the material now being dealt with is such as to admit of its being loaded as neatly into the smaller vehicle as into the larger, within a percentage of error which would be inappreciable.

In this case it is the nature of the material, and not so much the effect of the small size of the measuring boxes for which we have sought to make proper allowance.

We have made all of these deductions upon the rules derived from engineering experience generally, in constructing embankments on dry land, and not in the water, as is this sea-wall embankment.

We are of the opinion that the consolidation of the bank in the water would be fully as great in degree, as in the case of dry built embankments, if, indeed it would not be greater. We do not, however, take this effect into consideration, for in any event it would be small in ultimate measure as compared to that under consideration, and we have no certain means of determining the elements for its application.

We conclude that the sand delivered in vehicles, as earth, would fill in the consolidated embankment 80 per cent. of the space occupied by it in the vehicle as measured, supposing it to have compacted 50 per cent. from its condition when loaded; and the remaining material (as before described), would fill 74 per cent. of the corresponding space in the vehicle.

THE RESULT OF THE JOB-WORK CONTRACTS.

We have now set before you, as we believe, for the several classes of material used and the varying circumstances of their transportation, the ratios which existed between the percentage of void space within the mass of each as held in the vehicle of measurement, and as consolidated in the embankment or wall.

Before proceeding to apply these figures, in the correction of the reported results or final estimates, under each contract and in each

section of the work, we desire to draw your attention to another point. Two large jobs of the sea-wall work were executed for lump sums. These were the Kearny Street fill and connecting embankment, and Section 1 to 91 feet in width of the sea-wall proper. These were the first two jobs let, and the system of contracting was thereafter changed to the cubic yard rating for stone and earth or sand.

Under the circumstances of the first two contracts, it was not necessary for purposes of the payment of the contractor, that the amount of material used should be gauged, for he was to receive only a prefixed sum for the job complete in each instance.

The following stipulation, however, appears in the specifications for Section 1: "The contractor shall afford the Chief Engineer of the Board every facility for determining the quantity of material used; and, to this end, the cars, carts, or other vehicles, shall be, as far as possible, of uniform dimensions and filled with uniform loads."

As instructed by the engineer, the supervisor of construction, who was charged with the duty of examining the quality of the material delivered by the contractor, and also with the direction of its deposition in the work, kept accounts of the loads of the several classes, and of the volume in cubic yards of the average loads of each class, under these two job-work contracts.

Those accounts are to be found in two memorandum books amongst the engineering records of the work. We have made up from them statements of material delivered under each contract.

To these works, and the statements concerning their outcomes, we now ask your attention.

THE KEARNY-STREET FILL AND CONNECTING EMBANKMENT.

The "Kearny-street fill and connecting embankment" work was undertaken for the purpose of providing a causeway along which to transport material for the construction of the "sea-wall and embankment," from land at the junction of Kearny and Bay Streets to the site of the proposed main work, at about the dividing line between Sections 1 and 2 thereof. It was doubtless intended to serve also as a dam to prevent the flow of the tidal currents, back and forth, through the water space that intervened between the shore and the embankment in course of construction, and thus protect the lighter bank materials from being altogether carried away.

A description of this embankment and fill will be found appended with that of the sea-wall and embankment. Its calculated contents, including earth and stone, through the mud and sand to the hard bottom, and excluding the western slope of the fill, which was paid for by the owner of property on that side of the street, is 41,299 cubic yards.

According to the check or tally book of the supervisor of construction, 58,154 cubic yards of material, as measured in the vehicles of delivery, cars and carts, were put into the work. Of this amount, about 4,000 cubic yards are proportionally due to the slope on the western side of the fill, leaving 54,154 cubic yards used, as against 41,299 cubic yards estimated to "hard bottom," an excess of 12,855 cubic yards, or 31 per cent. more than calculated upon as enough to found the work on the plane of mud below which the testing rods had not penetrated—the plane called that of "hard bottom." There

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was no estimate for bids on this work. The contractor agreed for a specified sum to complete the job.

Upon the drawings representing sections of the proposed bank, a memorandum is found to the following effect, viz., that:

1. "Supposing the earth and stone facing to earth embankment to sink to one third depth of the *mud*, and the rock embankment to sink to *sand*," the quantities required would be, of rock, 8,290 cubic yards, and of earth, 18,397 cubic yards—a total of 26,687 cubic yards.

2. "Supposing both earth and rock embankment to sink to *sand*," the quantities required would be, of rock, 8,280 cubic yards, and of earth, 27,142 cubic yards.

The word "sand" was here used as representing the upper plane of the material in the bottom, into which the testing rod did not sink of its own weight, and hence in this respect is synonymous with "hard mud," an expression used in connection with other portions of the work. The material is really a firm sandy mud, and probably presents about the same resistance to the settling of the embankment as "hard mud" did elsewhere.

There was no estimate originally made of the contents of this work, supposing it to settle to "hard bottom;" but that heretofore given has been made under our direction for the purpose of obtaining a result to compare with results in other portions of the work.

SECTION ONE—FIRST CONTRACT.

From the end of the "connecting embankment," Section 1 of the main work extended westerly, its length being one thousand feet. Concerning the amount of material used in this construction, we find three sources of information, namely: the tally-books, the returns of the supervisor of construction submitted to the Chief Engineer, and the monthly reports or statements made by the Chief Engineer to the Board of Harbor Commissioners; upon which latter, partial payments were made to the contractor.

We have compiled these three sets of results, and now bring them together in two tabular exhibits—one for stone, and the other for earth. To the first of these we ask your attention.

COMPARISON OF RESULTS AND RETURNS.

SECTION I.—STONE.

MONTHS.	ENGINEER'S STATEMENTS.		SUPERVISORS' RETURNS.		SUPERVISORS' TALLY ACCOUNT.	
	Monthly Work.	Total to Date.	Monthly Work.	Total to Date.	Monthly Work.	Total to Date.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
November, 1878	600	----------	1,530	----------	1,530	----------
December	330	930				
January, 1879	24,690	25,620	24,090	25,620	24,085	25,615
February	40,545	66,165	40,575	66,195	40,580	66,195
March	15,000	81,165	27,140	93,335	27,140	93,335
April	2,056	83,221	3,056	96,391	4,795	98,130
May	128	83,349	128	96,519	128	98,258
June	4,651	88,000	7,934	104,453	7,934	106,192
July	2,327	90,327	3,912	108,365	3,912	110,104
Totals	90,327	----------	108,365	----------	110,104	----------

In the above table the first, third, and fifth columns of figures show the amounts of stone in cubic yards delivered by the contractor during each month, respectively, according to the "Engineer's Statements" to the Board, the "Supervisor's Returns" to the Engineer, and the "Supervisor's Tally Account," as per memorandum books in the office; and the second, fourth, and sixth columns of figures show the total quantities of stone delivered from the commencement of the work to the ends of the several months, according to the authorities, severally, as above enumerated.

A comparison of the figures representing the deductions from the daily tally account, and those from the monthly returns of the supervisor of construction, in the fifth and third columns, shows a nearly perfect accord in the matter of results for each month from the commencement to the end of the work, except for the month of April, 1879, when 1,739 cubic yards more were tallied by the car load than were entered in the returns. Thus, the total number of cubic yards of stone checked off as measured by the car or cart load for the job, was 110,104, and the total number reported to the Chief Engineer was 108,365 cubic yards.

A comparison of the figures derived from the engineer's statements to the Harbor Commissioners with those from the returns made to him by the supervisor, shows that, for the first four months of the work, to the end of February, 1879, the total amounts correspond within thirty cubic yards—the supervisor returned a total to date of 66,195 cubic yards, and the engineer reported 66,165 cubic yards as having been done. Thenceforward, to the close of the contract, it will be seen that the engineer, each month, with the exception of May, reported a considerably less amount of work as having been done, than was entered upon the returns made to him. So that, at the close of the contract, his sum total was 90,327 cubic yards, as against 108,365, returned by the supervisor of construction.

The explanation of this difference is readily made. The contract was for a lump sum—$96,000—and the contractor was to receive monthly partial payments on the proportion of his full contract work executed during the past month. In order that there might be a basis for payment without danger of greatly overrunning, it was necessary to assume some total quantity of each class of work, and to pay for partial quantities reported from time to time at some rate that would allow a fair proportion of the stipulated price for the whole.

The engineer, in February, 1879, when 25,620 cubic yards of stone had been deposited, as per returns made to him, fixed upon the number 90,327 as that of the cubic yards which would probably be required, this being nearly the amount of a mean between the estimated contents of the wall to the "hard mud" plane, and that to the "hard bottom" plane. He assumed that the wall material would sink to that depth, and that he might safely pay on that basis. It appears, however, the experience of that and the next month showed him that he had fixed upon too low a figure as a basis upon which to make his partial statements; so we find him in March reporting only 15,000 cubic yards delivered, when 27,140 were reported to him by the supervisor; and so on to the end of the work, as shown by the table, when he made his returns in the aggregate correspond with his estimated or assumed amount.

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We now ask your attention to the second tabular exhibit spoken of:

COMPARISON OF RESULTS AND RETURNS.

SECTION I.—EARTH.

MONTHS.	ENGINEER'S STATEMENTS.		SUPERVISOR'S RETURNS.		SUPERVISOR'S TALLY ACCOUNT.	
	Monthly Work.	Total to Date.	Monthly Work.	Total to Date.	Monthly Work.	Total to Date.
1879.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
January	6,380		6,380		6,380	
February	12,230	18,610	12,310	18,690	12,310	18,690
March	20,390	39,000	26,460	45,150	26,450	45,140
April	21,104	60,104	21,104	66,254	30,215	75,355
May	17,896	78,000	25,540	91,794	25,540	100,895
June		78,000	924	92,718	924	101,819
July	1,000	79,000	7,580	100,298	7,580	109,399
Totals	79,000.		100,298		109,399	

The figures in this table relate to earth work in Section 1 (as those in the table preceding did to the stone work), and, with this exception, the explanation following the first table applies to that now presented.

It will be seen that the monthly quantities made up from the tally account of car or cart loads, according to the prescribed rating, as shown in the fifth column, corresponds in every instance with those in the third column, which were returned to the engineer by the supervisor, except those for the month of April, when the tally account exceeds the return by 9,111 cubic yards.

Passing again to a comparison of the supervisor's returns to the Engineer, with those of the engineer to the Board, a condition of things similar to that found to have existed in the case of the rock, is here detected. After the second month of the earth work, namely, in March, 1879, the engineer evidently found that his total estimate made as a basis for partial payments was too low, and he thenceforward reported to the Board monthly, except in the case of April, a less number of cubic yards than were entered upon the supervisor's returns to him. At the end of the work he made his total quantity reported correspond with his estimated amount of 79,000 cubic yards, which was, as in the case of the rock wall, about a mean between the estimates for the embankments to the "firm mud" and the "hard bottom" planes in the substrata, while at the same time his representative on the ground had reported to him that 100,298 cubic yards had been placed in the embankment. Of course, the explanation given for the engineer's reason for thus making his final return and original estimate come out together, is the same in this case, as in that of the stone, as already given.

The following formulated exhibit enables a provisional comparison of results with estimates to be readily made. It being remembered that corrections are yet to be applied to the outcome for shrinkage in the embankment.

COMPARISON OF RESULTS AND ESTIMATES.

SECTION I.

(Results yet to be corrected for comparison.)

	Stone.	Earth.
Estimates to "hard mud" plane	84,252	73,037
Estimates to "hard bottom" plane	109,674	87,811
Engineer's basis for partial payments	90,327	79,000
Engineer's sum total reported	90,327	79,000
Actual results (supervisor's returns)	108,365	100,298

We accept the figures given in the supervisor's returns, over his signature, as being the actual results as to the volumes of materials delivered and measured in the vehicles, for the tally account in the memorandum book, although possibly correct, has been kept in a most unbusinesslike manner, is difficult to understand, and is not signed, so that we feel bound to take the written official statements, or returns, of the supervisor of construction, who kept the tally, in preference to the memorandum account thereof itself in the condition in which we find it.

APPLICATION OF THE JOB-WORK CONTRACT RESULTS.

These results which, so far as we know, have not been brought to light before, have an important bearing in the consideration of the whole question we have before us.

It will be readily understood that a contractor, working by the job, will endeavor to secure the greatest result possible from the labor of his teams and other motive power—his vehicles will be well loaded.

In the case of the first two jobs—the Kearny street causeway and Section 1 of the wall and embankment to ninety-one feet wide—a tally account was kept of the loads of material delivered, possibly for the purpose of establishing approximate results from month to month upon which to pay some portion of the gross sums agreed upon. There had to be a supervisor of construction on the work to reject or accept the material according to its quality, and to direct its dumpage, and he kept the account. It is to be presumed that the engineer also had in view the acquirement of some more definite knowledge of the amount of material really required for this novel work than could be obtained from simply sounding with a lead and testing the bottom material with a rod or pipe.

Under all subsequent contracts, the tally accounts of loads delivered were kept, not only as a basis for partial payments, but as the record of a measure for final settlement, these works being paid for by the cubic yard.

If, therefore, we have arrived at a knowledge of the real outcome under these two first contracts, undertaken by the job, we have the foundation for a fair judgment on the outcome of subsequent work, undertaken by the cubic yard estimated in the vehicle of delivery—knowing, of course, the varying conditions in each case.

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CORRECTIONS OF THE RESULTS

ON ACCOUNT OF CONSOLIDATION OF MATERIAL IN THE WORK.

Having acquired a knowledge of the real outcome, by car or cart measurement, on the job-work contract sections, we have the results under all the contracts upon the same basis, and may now apply the corrections heretofore determined upon as proper for shrinkage or consolidation of the materials in the wall and embankment, below the standard of measurement in the vehicles.

For reasons which we shall hereafter explain, we do not claim perfect accuracy for the figures representing the amounts carried in the several classes of vehicles, nor for those representing the aggregate amounts of the several classes of material in the following tables, but they are derived from a tabulation of the tally returns and information as to source of supply of materials, and are quite close enough to the truth for the purposes of this report.

With what has been already said in explanation of the degrees of consolidation of materials in the embankments over their conditions in the vehicles of delivery, the following exhibits will be readily comprehended.

Table showing the Space in the Stone Wall which the Material (Stone) Delivered and Measured in Vehicles probably filled. Allowances made for Character of Material and Class of Vehicle.

	Quantities, Vehicle Measurements.	Correction for Consolidation, Per cent. and amount.	Results in the Stone Wall.
	Cub. yds.	Cub. yds.	Cub. yds.
Section 1	Cars 108,365	13.33 per ct. 14,445.1	93,919.9
Section 2	Cars 130,739	13.33 per ct. 17,427.5	113,311.5
	C. W. 12,000	19.00 per ct. 2,280	9,720.0
			123,031.5
Section 3	Cars 180,312	13.33 per ct. 24,035.6	156,276.4
	Carts	20.00 per ct. 1,520	6,080.0
			162,356.4
Section 4	Carts 182,986	20.00 per ct. 36,597	146,389.0
Section A	Carts 73,793	20.00 per ct. 14,758.6	59,034.0

Table showing the Space in the Earth Embankment which the Material (Earth) Delivered and Measured in Vehicles probably filled. Allowances made for Character of Materials and Class of Vehicle.

	Quantities, Vehicle Measurement.	Quantities, Material Classified.	Correction for Shrinkage, Per cent. and Amount.	Results in the Embankm't.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Section 1	Cars	Sand 100,298	—20 per cent. 20,060	80,238
	W. C.	Earth	—26 per cent.	
Section 2	Cars 131,352	Sand 131,352	—20 per cent. 26,270	105,082
	W. C. 26,000	Earth 26,000	—26 per cent. 6,760	19,240
	157,352	157,352		124,322
Section 1, W.	Cars 222,175	Sand 221,091	—20 per cent. 44,218	176,873
	W. C. 10,706	Earth 11,790	—26 per cent. 3,065	8,725
	232,881	232,881		185,598
Section 2, W.	Cars 136,920	Sand 134,920	—20 per cent. 26,984	107,936
	W. C. 30,992	Earth 32,992	—26 per cent. 8,578	24,414
	167,912	167,912		132,350
Section 3	Cars	Sand 120,890	—20 per cent. 24,178	96,712
	W. C.	Earth 108,375	—26 per cent. 28,177	80,198
		229,265		176,910
Section 4	Cars 171,873	Sand 171,873	—20 per cent. 34,375	137,498
	W. C. 63,297	Earth 63,297	—26 per cent. 16,457	46,840
	235,170	235,170		184,338
Section A.	Cars 94,800	Sand 95,800	—20 per cent. 19,160	76,640
	W. C. 27,967	Earth 27,967	—26 per cent. 7,271	20,696
	123,767	123,767		97,336
Kearny St. Embankment		Earth and stone 54,154	—20 per cent. 10,831	43,323

A COMPARISON OF THE RESULTS

IN THE DIFFERENT SECTIONS OF THE WORK.

Upon the basis of the foregoing quantitative results, as per cart and car measurement, reduced to effective amounts in the wall and embankment, in the light of a study of the nature of the foundation of the wall in its several sections (the data for which we append in brief), together with a consideration of the circumstances of construction, the environments of the several parts of the work, the influences to which they have been exposed, the material employed, and the results of the resurvey of the structure, we are enabled to make a useful comparison of the ratios between the estimates and the outcomes in the several sections, to still further account for apparently anomalous results, and to arrive at an understanding of the whole subject, such as to enable us to form a just opinion of the results.

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With respect to a comparison of the tally accounts, so far as they can be understood, the Supervisor's returns and the Engineer's monthly statements, under each contract by the cubic yard, it is sufficient here to remark that, so far as we have examined them, they agree without material variation. It has therefore been unnecessary to bring a synopsis of the former into the following tabulations, which have been made with the view of comparing results in the different sections, and not the records of each section.

Three tables have been prepared for the purpose of these comparisons: the first exhibits the quantitative data relative to the stone work under all the contracts on the sea-wall proper; the second shows similar data with respect to the earth in the embankment; and the third contains the data of the second combined for the earth-work in Sections 1 and 2, with that, respectively, for the widening of those sections, so as to place the results on all the sections upon an equal footing for comparison in the light of the physical facts in each case. To the second table is added also the data relative to the Kearny Street fill and connecting embankment.

TABLE B—1.

Comparison of Results with Estimates. Results Corrected for Degree of Consolidation in Wall over Condition in the Vehicles.

STONE WALL.

SECTION.	1 Results: As per Car, Cart, and Wagon Measurement.	2 Results: Corrected for Consolidation in Wall over Vehicle.	3 Estimates to Hard Bottom.	4 Differences.	5 Per Cent of Differences.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	
A	73,793	59,034	55,956	+3,078	+5.5
One	108,365	93,920	109,674	−15,754	−14.4
Two	142,739	123,031	139,485	−16,454	−11.8
Three	187,912	162,356	155,007	+7,349	+4.7
Four	182,986	146,389	132,993	+13,396	+10.1

The first column of figures in the foregoing table shows the results, in numbers of cubic yards, of the measurement in the cars, carts, and wagons of delivery of the materials employed in building the stone wall in the corresponding sections, according to the reports of the engineer to the Harbor Commissioners, in all cases except in that of Section 1, wherein the aggregate of returns made by the supervisors of construction to the engineer is taken, for reasons heretofore explained.

The second column of figures shows, in numbers of cubic yards, the volumes of space in the stone wall, which we have estimated the volumes reported by vehicle measurement, in each case would fill as per preceding tabular exhibit.

The third column of figures shows, in numbers of cubic yards, the volumes of space in the stone wall for each section of the work as estimated within the planes of the presupposed slopes and above that of "hard bottom," or that beyond which the testing rod failed to sink under the maximum load.

The fourth column of figures shows the differences, in numbers of cubic yards in each case, between the numbers in the second and third columns. Where the corrected results exceed the estimates to "hard bottom," the difference has the plus (+) sign affixed; where the result is less than the estimate, the minus (—) sign is used.

The fifth column of figures shows the percentage of the estimate, in each case by which the corrected result exceeds or falls within it.

TABLE B—2.

Comparison of Results with Estimates in the several Sections of the Embankment. Results Corrected for Degree of Consolidation in the Earth Embankment over Condition in the Vehicles.

EARTH EMBANKMENT.

SECTION.	1 Results: As per Cart, Car, and Wagon Measurement.	2 Results: Corrected for Consolidation in Embankment over Vehicle.	3 Estimates to Hard Bottom.	4 Differences.	5 Per Cent. of Difference.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	
A	123,767	97,336	100,737	−3,401	−3.4
One	100,298	80,238	87,811	−7,573	−8.6
One (widening)	232,881	185,598	167,798	+17,800	+10.6
Two	157,352	124,322	172,134	−47,812	−27.7
Two (widening)	167,912	132,350	130,025	+2,325	+1.8
Three	229,265	176,910	196,840	−19,930	−10.1
Four	235,170	184,338	358,448	−174,110	−48.6
Kearny Street Con. Embank't	54,154	43,323	41,299	+2,024	+4.9

The explanation given of the table (B—1) which has gone before, will apply equally to the one now presented, with the understanding that this one relates to the earth-work under the several contracts, and that the words "earth embankment" are to be substituted for those of "stone wall," wherever the latter occurs in said explanation.

As hereinbefore mentioned, the following table (B—3) contains the figures given in that which precedes, only those for Sections 1 and 2 are combined respectively with the ones for the widening of these sections. So that, in this table the comparison may be made for the outcome in the section entire.

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TABLE B—3.

Comparison of Results and Estimates. Results Corrected for Degree of Consolidation in Embankment over Condition in the Vehicles.

EARTH EMBANKMENT.

(By Sections complete as widened.)

SECTION.	1 Results: As per Cart, Car, and Wagon Measurement.	2 Results: Corrected for Consolidation in Embankm't over vehicle.	3 Estimates to Hard Bottom.	4 Differences.	5 Per cent. of Difference.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	
A	123,767	97,336	100,737	—3,401	—3.4
One	333,179	265,836	255,609	+10,227	+4.0
Two	325,264	256,672	302,159	—45,487	—15.0
Three	229,265	176,910	196,840	—19,930	—10.1
Four	235,170	184,338	358,448	—174,110	—48.6

The explanation given for Table B—2, applies equally to this one.

FINAL CORRECTIONS OF RESULTS

FOR CHANGES OF PLANS AND FOR EXTRA WORK.

Stone Wall.

Before making a comparison of these ratios, other corrections are to be applied.

After the original estimates for Section A had been made, a change in the plan of the work increased the amount of stone required by 4,120 cubic yards.

This change consisted principally in strengthening the end cross wall by an additional amount of material, so as to carry its outer face down to two feet below low water mark, upon a slope of 1 on 4, instead of 1 on 2, as originally planned and estimated.

In this respect the change was a prudent one, and the State has a better work in consequence. A slight change in alignment, which was also made, was prompted by reasons which were doubtless sufficient to the Harbor Commissioners, but have no particular significance in this inquiry. We find, on the face of this section, the stone carried beyond the line and slope of the original plan, thus involving an excess of 7,350 cubic yards more than the first estimate.

Whether this was due to a lateral movement or spreading of the structure during the time of its building, or to an inadvertant deviation from the line, of course, we cannot with certainty tell. The engineers in charge say that there was such lateral movement as mentioned; but our examination of the work, of the character of the bottom material, the transverse slope of its planes, and the results of our survey, leads us to believe that if such movement did take place, it was not enough to account for the excess of material we find in place over the line. However this may be, by reason of this extra amount of stone the structure is all the better fitted to resist the wearing wave action to which it is subjected at this particular locality.

Finally, by reason of the change in cross-section on this division of the wall, as shown upon a diagram appended hereto, about 1,040 additional cubic yards of stone were made necessary.

The total corrections on stone work to be applied to the outcome in Section A, therefore, before comparing the ratios of results and estimates, is (4,120+7,350+1,040) 12,510 cubic yards. Which will make the result, as finally corrected for comparison, (59,034—12,510) 46,524 cubic yards.

The original estimate for stone on Section 4 was for the outer embankment only—the same as in other sections, except Section A, where there was an end wall, as already explained.

The specifications for section four provided that there should be a covering or pitching of stone from two to three feet in thickness put upon the slope of the earth embankment at its southern end. This material was estimated as part of and to be paid for as earth.

The plan was changed from this arrangement, and a stone wall, twenty feet wide on top, with the natural slopes of the material, was built across the end of the embankment, from its inner slope to the hard bank or filling of the shore line. This was done to cut off the escape of the mud from the space behind the wall, and to thus economize in earth (sand) in the main embankment.

The change added 10,380 cubic yards, as measured in the carts, to the amount of stone required for the work, after making due allowance for the pitching, which was paid for as earth. Deducting now from this amount 20 per cent, as before for the difference in degree of consolidation of the material in the carts and in the work, we have 8,304 cubic yards to be subtracted from the heretofore corrected result for this section, in order to put it on a fair basis for comparison with the others.

Again, the slope and plan of rock work in this section was changed, as in the case of section A, so as to require 1,851 cubic yards in the wall more than had been estimated. And, as in section A, so in this section, we found stone beyond the outer slope as planned and estimated originally, which warrants us in estimating the extra amount to have been 6,500 cubic yards. This must also be subtracted from the result before final comparison.

We have then (8,304+1,851+6,500), 16,655 cubic yards as a total amount to be substracted from the heretofore corrected results in this section. And this final correction being applied we have (146,389—16,655), 129,734 as the correct quantity to use in comparison with the estimates and with other results.

In the same manner we find corrections for Section 3 to be: for change at the crest about 1,000 cubic yards, and on the slope, 8,326 cubic yards. The total correction therefore is 9,326 cubic yards; which taken from the corrected result in last table (162,356—8,326), we have 154,030 cubic yards as a finally corrected amount for comparison in this section.

With the foregoing amounts substituted respectively for what we have heretofore called the "corrected results" of the work in Sections A, 3 and 4, we have the comparison table for stonework finally corrected as follows:

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TABLE C—1.

Comparison of Results with Estimates. Results Finally Corrected for Comparison.

STONE WALL.

SECTION.	1 Results: As per Cart, Car, and Wagon Measurement.	2 Results: As Finally Corrected for Comparison.	3 Estimates to Hard Bottom.	4 Differences.	5 Per Cent. of Differences.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	
A	73,793	46,524	55,956	—9,432	—16.8
One	108,365	93,920	109,674	—15,754	—14.4
Two	142,739	123,031	139,485	—16,454	—11.8
Three	187,912	154,030	155,007	-977	—0.6
Four	182,986	129,734	132,993	—3,259	—2.4

CORRECTION FOR CHANGE OF PLANS, ETC.

Earth Embankment.

As in the case of the stone, so in the earth-work, before applying the results of vehicle measurement, corrected for bank consolidation, in establishing a ratio of result to estimate under each contract, we must make certain allowances necessitated by the execution of work not contemplated in the original estimates or provided for in the specifications.

The change in plan on Section A at the westerly end, required 807 cubic yards of earth more than had been estimated, and the change of cross-section in stone embankment, referred to above, resulted in a saving of 2,695 cubic yards of earth measured in the embankment.

Applying these figures, we have, then, as a final outcome in this section for comparison with the original estimate, the corrected result (97,336 cubic yards) diminished by 807 cubic yards, and increased by 2,695 cubic yards, which would equal 99,224 cubic yards.

A foundation trench, dredged in the mud for the stone embankment in Section 3, was, according to the engineer's statements to the Harbor Commissioners, and his written and verbal statement to this Board, partially or entirely filled with sand before the stone was deposited. In this work about 60,000 cubic yards of sand, car measurement, was used, and this amount reduced 20 per cent for consolidation in the embankment is, therefore, to be deducted from the corrected results in the foregoing table.

By reason of a change in cross-section made on this division, as on others, 2,037 cubic yards less earth work was required; and this amount is to be deducted from the result shown in the previous table.

Applying these figures, we have 176,910 diminished by 48,000, and increased by 2,037, or 130,947 as the number of cubic yards to be compared finally with the estimate in this section.

The change made in plan and cross-section for stone work at the south end of Section 4, already referred to, reduced the demand for

earth by 8,304 cubic yards, measured in the embankment. Also the change made in cross-sectional disposition of the material, already referred to, in the stone work of this section, diminished the demand for earth by 4,812 cubic yards, measured in the embankment. Applying these figures, we have as a final outcome for comparison with the original estimate, the following: 184,338 increased by 8,304 and 4,812, which gives a total of 197,454 cubic yards.

The above constitute all the corrections on earth work made necessary by changes of design, of which we are apprized, to be applied for the purpose of our comparison.

Applying these corrections, we revise our Table B—2 so that it appears as follows:

TABLE C—2.

Comparison of Results with Estimates. Results finally Corrected for Comparison.

EARTH EMBANKMENT.

SECTION.	1 Results: As per Cart, Car, and Wagon Measurement.	2 Results: As finally Corrected for Comparison.	3 Estimate to Hard Bottom.	4 Differences.	5 Per Cent. of Differences.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	
A	123,767	99,224	100,737	—1,513	—1.5
One	100,298	80,238	87,811	—7,573	—8.6
One (widened)	232,881	185,598	167,798	+17,800	+10.6
Two	157,352	124,322	172,134	—47,812	—27.8
Two (widened)	167,912	132,350	130,025	+2,325	+1.8
Three	229,265	130,947	196,840	—65,893	—33.5
Four	235,170	197,454	358,448	—160,994	—44.9
Kearny Street Con. Embankment	54,154	43,323	41,299	+2,024	+4.9

And from this table we make up, as in a former case, a third table which we call C—3, and in which the earthwork for Sections 1 and 2 is considered as a whole, including the widening, as follows:

TABLE C—3.

Comparison of Results and Estimates. Results Finally Corrected for Comparison.

EARTH EMBANKMENT.

(By Sections complete as widened.)

SECTION.	1 Results: As per Cart, Car, and Wagon Measurement.	2 Results: As Finally Corrected for Comparison.	3 Estimates to Hard Bottom.	4 Differences.	5 Per Cent. of Differences.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	
A	123,767	99,224	100,737	—1,513	—1.5
One	333,179	265,836	255,609	+10,227	+4.0
Two	325,264	256,672	302,159	—45,487	—15.0
Three	229,265	130,947	196,840	—65,893	—33.5
Four	235,170	197,454	358,448	—160,994	—44.9
Kearny Street Con. Embankment	54,154	43,323	41,299	+2,024	+4.9

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FINAL COMPARISON OF RESULTS WITH ESTIMATES.

Taking the stone and earth separately in each section, as per Tables C—1 and C—3, we have the following percentages showing the differences between final results and the amounts originally estimated to hard bottom. (*Minus* represents per cent. short of, and *plus*, per cent. over the estimate made to the "hard bottom" plane.)

TABLE D.

SECTIONS.	Stone.	Earth.
Section A	Minus 16.8 per cent.	Minus 1.5 per cent.
Section One	Minus 14.4 per cent.	Plus 4.0 per cent.
Section Two	Minus 11.8 per cent.	Minus 15.0 per cent.
Section Three	Minus 0.6 per cent.	Minus 33.5 per cent.
Section Four	Minus 2.4 per cent.	Minus 44.9 per cent.

Observe that, in the case of the stone, at the west end of the work, on section A, the outcome falls 16.8 per cent. within the estimate to "hard bottom," and that thence eastward through the succeeding sections, the percentage of difference decreases, almost without variation from the rule, to Section 4, at the east end, where the stone result falls only 2.4 per cent. within the estimate.

In the case of the earth, on the contrary, the law of increase is reversed. In section A the result falls short of the estimate to hard bottom by 1.5 per cent., and in Section 4 by 44.9 per cent., increasing gradually from one to the other.

These results are to be studied in the light of the local conditions which influenced their production, and the following are the most important:

(1). The character of the material used.
(2). The character and depth of the mud strata.
(3). The exposure to wind, tide, and wave action.
(4). The proximity to hard bank lines.
(5). The maximum height of the work.
(6). The dredging of foundation trenches.

For the purpose of viewing the results in the light of the data concerning the character of the bottom materials, and the depths of the strata thereof, we present the following tabulations and notes:

TABLE E—1.

Table showing the Relation between the Depth of Mud and the Amount of Material used in the several Sections.

STONE WORK.

SECTIONS.	Per Cent. of Difference (Ratio)	Average Depth of Wall.	Averages for the Middle and Outside Test Lines.					
			Depth of Soft Mud	Depth of Hard Mud	Total Depth of Mud	Depth of Water.	Total Depth below Low Water to Hard Bottom	Height of Top of Wall above Hard Bottom
	1	2	3	4	5	6	7	8
A	—16.8	34.8	1.8	6.0	7.8	19.9	27.7	37.7
One	—14.4	41.3	3.2	6.5	9.7	25.4	35.1	45.1
Two	—11.8	48.4	6.8	7.1	13.9	28.1	42.0	52.0
Three	—0.6	55.0	12.3	13.3	25.6	19.8	45.4	55.4
Four	—2.4	50.0	15.4	16.2	31.6	8.8	40.4	50.4

TABLE E—2.

Table showing the Relations between the Character and Depth of Mud, and the Amount of Material used in the several Sections.

EARTH WORK.

SECTIONS.	Per Cent. of Difference (Ratio)		Averages for the Middle and Outside Test Lines.					
			Depth of Soft Mud	Depth of Hard Mud	Total Depth of Mud	Depth of Water.	Total Depth below Low Water.	Total Height Hard above Bottom
	1	2	3	4	5	6	7	8
A	—1.5		3.4	7.3	10.7	11.8	22.5	35.5
One	+4.0		7.3	5.3	12.6	17.5	30.1	43.1
Two	—15.0		13.0	8.1	21.1	17.5	38.6	51.6
Three	—33.5		12.8	11.4	24.2	15.2	39.4	52.4
Four	—44.9		14.2	22.5	36.7	5.8	42.5	55.5

TABLE F—1.

Comparison of Final Corrected Results with Maximum, Minimum, and Mean Estimates.

STONE EMBANKMENT.

SECTIONS.	Estimates.						Results.	
	To Hard Mud—Minimum	Average Depth from Top of Wall to Hard Mud	To Hard Bottom—Maximum	Average Depth from Top of Wall to Hard Bottom	Mean.—Cubic yards	Average Depth from Top of Wall to Mean Plane	Finally Corrected	Deduced Depth of Embankment
	1	2	3	4	5	6	7	8
A	40,370	31.7	55,956	37.7	48,163	34.7	46,524	24.8
One	84,252	38.8	109,674	45.1	96,963	42.0	93,920	31.3
Two	109,152	45.0	139,485	52.0	124,318	48.6	123,031	38.4
Three	99,057	42.8	155,007	55.4	127,032	49.3	154,030	45.0
Four	72,011	35.3	132,993	50.5	102,502	43.5	130,046	40.0

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TABLE F—2.

Comparison of Final Corrected Results with Maximum, Minimum, and Mean Estimates.

EARTH EMBANKMENT.

(Sections entire, including the widenings.)

SECTIONS.	ESTIMATES.			Finally Corrected Results.
	To Hard Mud.	To Hard Bottom.	Mean.	
A	76,664	100,737	88,700	99,224
One	218,226	255,604	236,915	265,836
Two	252,622	302,159	277,391	256,672
Three	151,031	196,840	173,935	130,947
Four	195,255	358,448	276,851	197,454

REVIEW OF THE OUTCOME OF THE STONE WORK.

The general character of the bottom at the west end of the work was firm and sandy, with a small proportion of gravel and shells.

In Sections A and 1, it was swept by the tides, and particularly on the outer halves of these, was almost free from a soft top stratum. This soft material was more apparent along the inside half of the work.

Going eastwardly the bottom gradually became less sandy and possessed more of the consistency and character of the ordinary water front mud, until, in Section 4, it developed this character perfectly.

At the west end of the work, in Sections A and 1, the material of the structure was subject to the greatest waste from tidal and wave action, and to loss from displacement toward the shore by reason of the remoteness of the resisting shore line, while, in Section 4, this condition was completely reversed, the change being gradual from west to east.

Overlooking the outcome on the stone embankment at the west end, we account for the considerable percentages of results as corrected within estimates, by the facts that, first, there was found a firm, sandy, gravelly mud, swept by the tides, and which resisted any great sinking of the structure; and, second, the embankment was at the minimum height, and consequently pressed its foundation the least.

A comparison of the numbers for Sections A, and 1 and 2, in columns 1, 5, and 8, Table E—1, shows how regularly the per cent. of difference between the final results and the estimates to hard bottom decreased.

This result is readily accounted for by the gradual increase of the height of the work in deeper water, and the greater depth of mud, admitting a greater settlement toward the bottom.

A comparison of the numbers for the same sections (A, 1 and 2,) in columns 6 and 8 of Table F—1, shows how remarkably nearly the bottom of the embankment must coincide with that of the mean estimate, *i. e.*, between the hard mud and hard bottom planes.

Observing the numbers of Sections 3 and 4 in columns 1 and 2 of Table E—1, as compared with others above, we account for the considerable depth to which the material has been pressed in Section 4

by the fact that 79,200 cubic yards of the mud, as measured on the scows, was dredged, forming a trench about 100 feet wide and 20 feet in depth, to furnish better foundation for the work. And we might also account in great degree for the still greater depth to which this material in the Section 3 wall has apparently gone, in the same way, for here also was a similar foundation trench excavated by removing 64,100 cubic yards, as measured in the scow; but we are told, also, that at least 60,000 cubic yards of sand (car measurement), as per our deductions in earth work, were dumped into this trench, and that the engineers were satisfied by soundings made with a greased lead over the adjacent muddy bottom, that they were not losing any considerable quantity by tidal current transportation.

We observe from columns 2 and 6, Table E—1, that the wall is pressed into the mud as follows:

Section A	4.9 feet.
Section One	5.9 feet.
Section Two	10.3 feet.

The average depth to which the dredging in Section 4 was carried (as deduced from the account of the quantity removed, 100 feet wide and 1,000 feet long) added to the average depth of water (as per the sounding records), fixes the plane upon which the stone for this section was dumped at about 29 feet below low water. This being the case, the wall has sunk on the average eleven feet below the bottom of the trench.

These figures are reasonable and in accord, considering the height of the wall in the several sections and the varying character of the bottom, as proven by analysis not reproduced here.

In the same manner as for Section 4, the plane of the bottom of the dredged trench in Section 3, is found to have been 35.4 feet below low water, and beyond this the stone sank 9.6 feet, besides displacing by pushing downwards, or outwards a layer of sand about 14.0 feet in thickness, allowing for compression. Probably sand to the depth of three or four feet was taken up into the interstices of the wall, but even with this allowance, we are forced to the conclusion that there is a result apparent in this outcome, which has not a parallel in the other sections of the work. Either there was not so much material placed in this section of the stonework, as was reported, or the excess is to be accounted for by the sliding away of the rock outside over the surface of the sand.

The cross-sections obtained by us show an apparent uplifting of the bottom mud along the face of this section, which is an indication of this action. And the dumping of the sand into the trench from one narrow trestlework, may have formed a ridge, as it were, down whose slopes the stone would move laterally when dumped, and when brought under pressure. This movement, however, could not have been considerable, for there is no sufficient displacement of the face of the wall which shows such result.

Without stopping to discuss the form which this wall may have taken in sinking, and which according to well known instances is not the flat bottomed prismoid assumed; and without introducing here a discussion of pressure on the bottom planes in the several

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sections, and their probable resulting forms, we conclude our special consideration of the results on the stonework, by expressing the opinion, as far as we can form one, that the quantity of stone reported to have been furnished under the several contracts, was actually delivered (as measured in a loose state in the vehicle), except in the case of the contract for Section 3, where there may have been 20,000 to 30,000 cubic yards more stone reported than was delivered.

REVIEW OF THE OUTCOME OF THE EARTHWORK.

Viewing now the outcome of the earthwork in the several sections, we see (Table E—2, column 1), that the results in Sections 3 and 4 are far short of the estimate to hard bottom, and our observations and calculations lead us to believe that these quantities were deposited, as accounted for, according to the system of measurement adopted on the work.

Taking these results as a criterion, and considering the influences heretofore mentioned, we are not so well assured that the quantities charged against Section 2 were thus faithfully delivered, although the margin for an excess would certainly fall within 10,000 cubic yards.

We here remark (referring to Table C—2) that if any such overreturn has been made in this section it has been under the contract for widening; at the same time we call attention to the fact, that the work of widening followed close upon, and was in fact, continuous with the original filling of the section to ninety-one feet in width, and the loss from spreading shorewards, and sinking on the inner unsupported edge would naturally fall in the widening work, and hence this result could not be expected to come so near to the preliminary estimate as that for the original earthwork to ninety-one feet.

Passing to Section A we have an outcome which, supposing that the earth embankment preserved its prismoidal shape in sinking, would show that its bottom rested upon a surface only a foot above the plane of so-called "hard bottom." The fact is that the bank could not have thus sunk into the bottom in this section. The material below the first thin stratum called "soft mud," was sand, very much of the same character as that used for bank construction, and we are of opinion that its surface plane was not penetrated, nor the material thereof pressed out by the embankment.

Upon the basis of this degree of settlement, to the plane of "sand" or "hard mud," it will be seen (Table F—2) that the material put in Section A exceeded that required to hard mud by (99,224—76,664) 22,560 cubic yards.

It is impossible to express a decided opinion as to what has become of this material. It is said that much was lost, by wave and tidal action, during the course of construction and subsequently; this is not at all improbable, for the exposure thereto has undoubtedly been great. Again, we find the basin behind this section to be much filled in; although it is impossible to say how much of this filling has been contributed by sands from the work. There is undoubtedly an accretion to the extent of 20,700 cubic yards, along the back of the section

and within 150 feet of its inner crest line (as shown by profiles recently made), which has a slight slope away from the bank—as a beach spread out from it. Beyond this the new deposit extends for several hundred feet, but with less depth.

Finally, returning to Section 1, it will be seen (Table F—2) that, admitting the bank in this section to have settled to the "hard mud" plane, which in the light of our study is the probability, there is an excess of result over estimates of (265,836—218,226) 47,610 cubic yards.

As in the case of Section A, we cannot say unreservedly what has become of this material, but we call attention to the fact that the same influences were at work to remove and spread it from the back line of the bank into the adjacent water space toward the shore; and to the further fact, disclosed by our survey, that there are, in the rear of the embankment, within 150 feet of its crest, 53,000 cubic yards of material lying above the original surface, and, furthermore, that this apparent filling is continued shorewards with a diminishing depth.

In the case of Section 1, the construction to 91 feet in width, was finished about two months and a half before the widening work commenced. This period gave ample time for settlement of the bank, and consequent bulging up of the mud along its inside face, and for the loss of sand from that face by tidal current and wave action, so as to form a beach-like slope under the side of the widening, such as we find now behind it. In view of this, we cannot altogether reconcile the outcome on the widening work to the lesson on the original work. Or, in other words, if the material bulged up and spread out behind the bank as originally constructed, was pushed before the widening filling and did not rest underneath it, then the appearance of accretion behind the work as widened is due, in a measure, to the original construction, and not alone to the effect of, and loss of material from, the widening work.

The outcome largely over estimates, under the contract for the connecting embankment and Kearny street fill, is explained by the fact that this work was, as a pier head, built out into the current and down a gradually deepening slope of water and mud; large quantities of material were washed from the head of the work by the waves and current, and the whole mass had an opportunity for spreading into the mud, down the slope in front of it, which was not presented in the same degree to any other portion of the work.

Reviewing the situation with respect to the earth-work results, in the light of the tabulated data, our opinion is, that in Section 3 the outcome, after making deduction for the sand which was put in the trench under the stone wall, is within the limits of the probable amount of material delivered. Without this deduction it exceeds such limits by 15,000 to 20,000 cubic yards.

In Section 2, including the widening, the result is such as to warrant us in expressing the opinion that the amount is within 10,000 cubic yards of the probability, and in Section 1 it is within 15,000 cubic yards of the probability.

It is not to be understood that we express the unqualified opinion that there have been excessive returns of materials to the above amounts; with the exception of the case of Section 3, it is possible

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that all the material reported has been put into the work, though we do not believe that proof of the fact by an engineering investigation can be established; and the indications are from the record that the reverse is the case, to the extent of the amounts mentioned.

It should of course be understood, that if we suppose an excessive return of stone to have been made in Section 3, the same cannot be said of the earth. The excess must be either in stone or earth, and not in both to the amounts mentioned, since in this case these materials may replace each other in the work, except that the quantity would be less in the case of the earth.

We have reviewed Sections 1 and 2, each as a whole, although the earth for each was put in under two contracts—one to build to ninety-one feet in width, and the other to widen to 200 feet.

It is probable that some material was reported as having been put in under the widening contracts which should have gone in under the original work; but this cannot be proven; for in the case of Section 2, particularly, the several works were being carried on at the same time with the same class of material, and merged into one another, so that the bulk of the spreading and loss might have fallen upon the widening, and the plane of separation could not be discovered. This paragraph is not to be taken as in conflict with what we have already said concerning the quantity of material reported over the limits of probability. If, as we have pointed out as likely, more material was reported than was delivered, it was done under the widening contracts.

We are told that deep holes and crevices filled with soft mud existed, into which unexpected quantities of material had to be dumped in order to complete the filling. Our study of this subject in the light of the records of the test rod and pile experiments, forbid an acceptance of this theory. The bottom mud has been shown by the above examinations to be remarkably homogeneous in character, and free from local irregularity of depth and consistency.

If casual and unexpected sinkings have occurred during the progress of the work, they may well have been the result of an irregular line of filling causing lateral or longitudinal displacement, rather than the result of an irregular bottom resistance.

If it be asked what has become of the mud which has been displaced by the wall and embankment, the answer is, it has, first, been taken up into the void spaces between the stones and between the grains of sand; and, second, has been displaced laterally—chiefly toward the shore, where it is now to be seen bulged up above low-water mark, in places where formerly there was eight to twelve feet of water at low tide.

The displaced material shorewards, at the east end of Section 1, and in Sections 2, 3, and 4, is marked, and, in extent, apparently sufficient to account for the movement from the foundation of the work.

As to the character of the accretion or displaced material behind the greater portion of Section 1 and Section A, its slope away from the bank indicates at least a wash, as of a beach, down from the bank filling. If there was any displacement from below the bank, which caused the bottom to rise along its edge as in other sections, the evidence of it has been for the most part obliterated by material washed

from the bank. The surface material now seen at this locality is a soft black mud, doubtless a deposit from the sewers which discharge into the basin.

SPECIAL POINTS AND CONSIDERATIONS.

SETTLEMENT OF THE WALL AND EMBANKMENT.

The extent of settlement of this wall and embankment into the strata on which it is founded is a subject on which much might be written, but we refrain from burdening our report with scientific discussion which is unnecessary for its purpose.

Suffice it to say that we have looked into this matter, and have expended much labor upon it, in the light of the records of the bottom tests made by driving piles and pipes, by a former engineer of the Harbor Commissioners. And we are satisfied that neither the wall nor the embankment materials have ever penetrated below the plane of so-called "hard bottom," notwithstanding the fact that the dredging was executed to the extent elsewhere mentioned in this report under the site of the wall in Sections 3 and 4.

The examinations upon which we base our opinion were made by the then acting Chief Engineer before the work commenced, for the purpose of testing the bearing power of the bottom material upon which the wall was to be founded.

It is not scientific, nor logical, nor yet practical, to say that these observations are not to be relied on just because the amount of material put into the work has apparently been in excess of the estimated quantity to "hard bottom," when there never has been a definite consideration of the other possible causes for the anomaly, a single note kept on the pile-driving work since carried on, or an experiment made to contradict their argument, nor even a theoretical demonstration attempted upon the basis of the preliminary observations themselves.

We certainly do not feel at liberty to discredit the results of an official testing made at considerable expense before any work was commenced, and presumably purely in search of facts.

If indeed the result of these observations are worthless, it is easy to show them to be so. It is easy to test to a pound by experimentally eliminating the influence of friction, the bearing power of every stratum of mud, where the wall is not built, and if we had had the means we would have had this done for the purpose of our study.

MEASUREMENT OF CARS, CARTS, ETC.

Appended hereto will be found the detail of all measurements made of cars, carts, etc., of which we have found record.

The general subject of the comparative degrees of consolidation of materials as resting in natural deposits, as loosened and thrown into cars, or other vehicles, and again compacted in an embankment, has already been discussed, and application to the case in hand has been made.

To these deductions we have no further additions to make except in the case of sand delivered in cars.

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For the sake of discussion, and to bring the results under all the contracts approximately to a common basis for the purpose of comparing ratios of variation from estimates, we assumed that the difference in bulk between the car loads of sand at the pit and at the dump would be five per cent. of the volume at the pit; that cars loaded with two scoopfuls of sand, each measuring 2½ cubic yards, or 5¼ in all, would contain about five cubic yards in volume on arriving at the dump, as claimed. But the fact is, that material taken up in a scoop of this description, rests therein in the loosest possible condition, particularly if it be wet sand, and the further fact is, that sand carefully put in a box with shovels, even, will, if dry, consolidate by shaking, 9 per cent., and if wet, 11½ per cent.

These figures are given by Gilmore, in his work on "Limes, Hydraulic Cement, etc." as the result of his own experiments. Trautwine, in his "Engineers' Pocket-book," cites examples where sands were consolidated to a greater degree by shaking, and a much greater degree by tamping.

Now, if there were 5.25 (5¼) cubic yards, as measured in the scoops, regularly loaded in the cars at the pit, this material may well have been consolidated, by shaking, 7 or 8 per cent. in transit to the dump, so that the loads there would measure about 4.85 cubic yards. We are informed that the cars were uniformly thus loaded, and we are of opinion that this material would settle in the cars to the per cent. just stated.

We base this opinion upon ample practical precedent, but particularly upon the result of the observations made on May 17, 1881, which (however unreliable they may have been as a gauging of the volume of the average carful as loaded) showed a loss of bulk in transit of nearly 8 per cent., and in this respect are admitted to have afforded a fair test, and which, in the absence of other data on this point, must be taken as a criterion for the whole. This being the case, all sand delivered in this manner fell short of the measurement paid for, about 3 per cent. thereof.

If the car loads of sand measured five cubic yards in volume on an average, at the dump, the scoop must have been filled to a little more than 2.125 (2¼) cubic yards each time at the loading.

A PROPER ENGINEERING SYSTEM.

The system of measuring quantities in carts, cars, or wagons, is the most uncertain method of gauging the extent of service rendered in earth and stone work, and should never be resorted to when possible to avoid it, although in all cases a number of partial checks on the results are available, and if these are properly applied, a fair measurement may be obtained.

In the first place the total amount of material taken from a quarry can be measured in the cutting by surveying and resurveying the site at intervals; so that the tallying of loads need only be necessary for the purpose of classification, and to account for its disposition in the different sections of a work.

The average weight of the cart or wagon load of stone of the various grades, being established by repeated trials, a condition of the contract might impose a penalty upon the contractor when at any time a cart or wagon load would be found to fall more than a certain per centage below this weight. Under such a stipulation, carts and wagons would always be fairly loaded.

The bell punch system could readily be applied in the counting of vehicles in a manner that would make it very difficult for the tally clerk to falsify the daily return as to number of loads brought down. Or the check paper system might be arranged to afford a close check on the number and loading, and to classify material also, if a tally were kept at the quarry as well as at the dump.

Although it is true that there would frequently be a vitiation of results, or a resurvey necessitated by drifting sand, in the case of measuring sand in the cuttings, yet such measurement could be effected, for short intervals of time, particularly when the sand is wet, as would enable the engineer to hold almost a complete check on the contractor as to the volumes of material delivered during those periods.

Material taken from lots and streets where grading is going on in firm soil, can of course be measured in place; and observations continued for a brief period of time would establish what the average load of the vehicle of each class, when thoroughly well filled, measured in the cutting from whence taken. Sand car beds could be arranged at slight expense, so that the loads could be quickly and accurately gauged.

The system of gauging the loads by eye measurement alone, must be very uncertain of correct results, no matter how conscientious the overseer may be. Starting with a few loads measured for a guide, as weeks go by, the eye may become gradually used to a smaller load, or to a larger one, so that injustice will be done one way or the other. By having proper side boards on the cars the eye judgment can be checked many times a day, and a fair measurement be made without loss of time; and this will render it possible to apply the next check.

The system of "throwing out" loads for slack loading is a bad one, and is almost certain to lead to error one way or the other. Every cart, car, or wagon should have its number and be measured; every load should be tallied, the number of the vehicle, and the proportion of its full load delivered each time, should be registered in form books prepared for the purpose, and these, certified to by the tally clerk each day, should be preserved as records.

Daily returns should be made of the result of each day's work, and these should be posted in account form in such manner as to show at a glance the extent of and the circumstances of each day's work, and the condition of the work to date.

There should be a daily journal kept of such work, describing the manner and the circumstances of its prosecution, the force employed thereon, the conditions that may have facilitated or retarded its progress, the classes of material delivered, the sources from whence derived, the points according to survey stations where deposited or used, the phenomena of settlement or lateral movement of the structure, the loss of material in any way detected, and the effects observed.

There should be a resurvey made of the work in progress once every month, and special instrumental examinations made to ascertain the extent of notable phenomena—such as the breaking away of part of the bank, or lateral movement thereof, and the bulging up of adjacent bottom mud; and these survey notes should be platted to tell graphically the history of the work.

There should be monthly progress reports, and final reports on the

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completion of each contract job, which would give the important results and conclusions in brief, and afford a key to the whole situation, as shown in detail in the journal, tally returns, and survey notes and plats.

The augmentation in bulk of the materials, from their state in nature to their condition in the vehicles, and subsequent loss of volume in transit, and consolidation in the wall and embankment, should, under the circumstances, be made the subject of special study.

Thorough and conclusive testing of the bearing power of the bottom strata and substrata should be made, and especially should this be done when unexpected sinkings and loss of material are continually occurring.

Attention to these points, the formulation of results, and deduction of rules therefrom for guidance in planning, estimating upon, contracting for, and managing the work in the future, undoubtedly constitute the engineering of such an enterprise.

THE ENGINEERING OF THE SEA-WALL.

We regret to say that the engineering of the sea-wall has not been thus conducted.

In the matter of accounting for material delivered, reliance has been placed altogether upon the integrity and judgment of tally clerks, so far as we could ascertain. Their judgment has been checked by a very small number of measurements in the vehicles, as the records show. Reliance has been placed, without adequate checks upon their returns of quantities of material delivered. The result may have been a complete protection of the State's interest; perfect honesty and efficiency may have been present in the persons of the tally clerks and supervisors of construction, but the functions of the engineers who have inaugurated and perpetuated such a system, on a public work, have been lost sight of.

In the matter of studying and recording the history of the work, nothing has been done. There has been no journal kept; no progress surveys made; no formulation of results; no examinations to ascertain definitely the causes of the excess over estimates of material used, and no reports filed, except the returns or statements of amounts on which the contractor has been paid.

In the construction of this work opportunity has been furnished for the acquirement of knowledge, by experiment and observation, of great value to the State in its future conduct as a guide in contracting, but nothing of this kind has been done.

If the engineers have any definite knowledge on record for future use and guidance, of results, and of the causes of the effects they have observed on this work; if data have been collected from which may be determined whether or not the prices paid were reasonable, or too high, we have not seen the record or learned of its existence. In these respects, we are prepared to say, the interests of the State have not been protected.

Furthermore, the way has been left open for just what has occurred: a public accusation of wrong-doing; an investigation of the final records by an expert accountant; and a report from him tending to confirm the suspicion that the State's interests have already suffered financially to a very great extent.

MR. CRANE'S REPORT.

The report of Mr. Crane to your Excellency was based upon the final records of the office, and not upon the detail of engineering notes and accounts, nor upon an engineering consideration of the subject.

According to the records, in the light of his examination—which was all he could be expected to make—the facts were just as stated by Mr. Crane; and his inferences were just such as the non-technical business man might be expected to draw.

Nevertheless, as we have shown, his conclusions were in error. If more material has been paid for, as measured in the cars, carts, and wagons, than was delivered upon the several sections of this work, the proportion to the whole amount has been much less than reported by Mr. Crane. It has been so small, that without a very expensive investigation we cannot say positively that such was the fact, but we draw conclusions which are undoubtedly substantiated by the records and the knowledge of facts at command.

CONCLUSIONS.

To recapitulate: We call attention to the facts, first, that the chief cause of misunderstanding as to the apparently great excesses of the results over the estimates on this work has been the fact that the material was contracted for in the loose state, as delivered in cars, carts, and wagons, and placed in a large wall and embankment where its degree of consolidation is from 15 to 25 per cent. greater than in the condition whereunder it was measured, so that the hundred cubic yards of the contracts and of the results have filled only seventy-five to eighty-five cubic yards of the work as estimated; and second, that work which was not included in the original estimates was performed under the contracts, and thus swelled the aggregate of the results.

The conclusions which are justified by the engineering record and the knowledge of physical facts acquired by us are now presented as follows:

Section 1.—It is probable that more earth was reported as having been delivered under the contract for widening Section 1 than was placed in this work.

The extent of this over return, in the light of the comparisons based upon the available data, probably did not exceed 15,000 cubic yards, though it is possible that it extended to 20,000 cubic yards, as measured in the embankment.

Section 2.—It is highly probable that material was reported as having been put into the widening of Section 2 which should have been reported under the contract work for Section 2 to the original width of ninety-one feet. The extent of this change was probably about 10,000 cubic yards.

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In addition to this, it is a possible conclusion, in the light of the comparisons upon the data at command, that more earth was returned as having been put into Section 2 than was actually delivered for this purpose. If such was the case, the over return was made under the widening contract and did not exceed 10,000 cubic yards.

Section 3.—In the case of Section 3 it is highly probable, in the light of the data at command, that either the stone reported as having been delivered exceeded the amount actually put into the work by 20,000 to 30,000 cubic yards, or the earth (sand) delivered fell short of the amount reported by 15,000 to 25,000 cubic yards, as measured in the embankment.

Section A.—In the case of Section A, a conclusion is possible upon the comparisons and facts, that the earth reported was about 5,000 to 8,000 cubic yards in excess of the amount delivered, though the conditions are too obscure upon which to ground a decided opinion.

With the above mentioned exceptions, the outcome on this work, as a whole, is about what might have been expected so far as we are able to figure from any data at our command.

On a work of this kind, conducted as this has been, there may have been error of the character, for instance, such as we have pointed out under the heading of "Measurement of Cars, Carts, etc.," or there may have been intentional wrongdoing in the matter of gauging and reporting the loads of material delivered, throughout the whole, so as to defy discovery by the method of detection we have had at command; but if such was the fact, in our judgment, the percentage of the total amount, under any contract, thus wrongfully reported, was small and not capable of detection by any engineering method now possible of application.

We called attention to the fact that an observer of the progress of this work, as it has been managed, might easily be led astray in judging of the returns.

Until a late period of its prosecution, the system of "throwing out" loads for slack measurement was practiced without making any record whatever of the details of the operation.

A person, noticing insufficiently loaded cars coming down every day, upon examining the returns would find all cars rated at five cubic yards each, and not knowing the system pursued, would immediately conclude that the returns were false.

During the earlier periods of the work, the cars were not always rated at five cubic yards, but ranged from four to five. Yet no record is made of the reason why; and it is only by close study of the notes, and by inquiry, that the explanation is found in the fact of the condition of the cars and the class of materials being transported.

We find all the way through the records some evidence of "throwing out loads" for "short measure," but the extent to which this was done in the protection of the State's interests, is undiscernable.

CLOSING.

In closing this report, we remind your Excellency that our investigation has been devoted exclusively to the engineering conduct of the work.

We have examined the engineering notes, maps, and records, and the sea-wall and embankment itself; and have sought to obtain the proper interpretation of the notes, and to supplement them, where not clear and explicit, by information from the engineers in charge of the work.

We have not sought nor received information regarding the business conduct of the work on the part of the Harbor Commissioners; nor have we considered information regarding the engineering conduct thereof which has come to us from sources other than official.

We have made such an engineering examination upon the records and the visible facts as the means at our disposal have made possible, and we have gone no further.

It will be seen, then, that our investigation has not related to the acts of the Board of Harbor Commissioners, but to those of their engineers and assistants in the engineering department.

Furthermore, we desire to express our opinion, that in the absence of a system of checks and periodical instrumental examinations of the work in progress, it has been quite possible for the returns of material delivered to have exceeded the quantities actually put in the work to a greater extent even than that indicated as probable, without the knowledge of the engineer in charge.

Very respectfully, your obedient servants,

WM. HAM HALL, S. E.,
CALVIN BROWN, C. E.,
FRANK SOULÉ, JR.

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APPENDICES.

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APPENDIX A.

Memorandum of the Dates of the Contracts on the Sea-Wall Work,

AND OF THE

Commencement and Completion of Work under Each Contract.

Section of the Work.	Date of Letting the Contract.	Date of Commencing the Work.	Date of Completing the Heavy Work.	Date of Final Completion of the Work.
Kearny Street Fill and connecting embankment	Oct. 1, 1878	Oct. 11, 1878	Jan. 20, 1879	Oct. 28, 1879
Section 1	Sept. 13, 1878	Nov. —, 1878 Jan. 4, 1879		July 19, 1879
Section 2	Nov. 5, 1878	Mar. 31, 1879		Jan. —, 1880
Widening of Section 1	Aug. 27, 1879	Sept. 25, 1879	April 30, 1880	May 15, 1880
Widening of Section 2	Aug. 27, 1879	Oct. 7, 1879	Feb. 25, 1880	April 30, 1880
Section 3	Jan. 25, 1879	Jan. 2, 1880	Dec. 16, 1880	April 8, 1881
Section A	Dec. 18, 1879	Mar. 8, 1880	Oct. 31, 1880	Jan. 24, 1881
Section 4	Mar. 27, 1880	Nov. 1, 1881	June 4, 1881	Aug. 12, 1881

APPENDIX B.

Memorandum of the Measurement of Car, Cart, and Wagon Loads.

Sand Cars of A. Onderdonk.

Measured by Mr. H. C. Holmes, Ass't Engineer, at the beginning of the widening of Section 1.

Cars measured loaded with sand. Loads shaped above sides into form of truncated pyramids. Measured at the dump after a haul of about one mile. Car beds about 10 feet x 8.2 feet x 1 foot; loaded and shaped 0.6 to 0.8 feet above sides.

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Twelve cars loaded with steam shovel or scoop (two scoopfuls each), and shaped for measurement by hand-shovel:

No. 1—5.02 cub. yds.	No. 5—5.16 cub. yds.	No. 9—4.95 cub. yds.
No. 2—4.95 cub. yds.	No. 6—4.96 cub. yds.	No. 10—4.64 cub. yds.
No. 3—5.02 cub. yds.	No. 7—5.02 cub. yds.	No. 11—4.94 cub. yds.
No. 4—4.92 cub. yds.	No. 8—4.95 cub. yds.	No. 12—4.94 cub. yds.

12 cars=59.47 cub. yds. Average, 4.96 cub. yds.

Eleven cars loaded with hand-shovels and shaped for measurement, as follows:

No. 1—5.32 cub. yds.	No. 5—5.50 cub. yds.	No. 9—5.24 cub. yds.
No. 2—5.44 cub. yds.	No. 6—5.18 cub. yds.	No. 10—5.92 cub. yds.
No. 3—5.57 cub. yds.	No. 7—5.44 cub. yds.	No. 11—6.00 cub. yds.
No. 4—5.57 cub. yds.	No. 8—5.51 cub. yds.	

11 cars=60.69 cub. yds. Average, 5.52 cub. yds.

When loaded with steam scoop the car does not get perfectly filled in corners, so that when the load is shaped the result is less than when loaded by hand.

Sand Cars of A. Onderdonk.

Measured July 1, 1880, by Mr. F. A. Bishop, Chief Engineer.

Method of measurement same as that described for Holmes' measurement of cars from the same lot, made at commencement of work on contracts for widening Sections 1 and 2.

No. 1—4.72 cub. yds.	No. 31—5.42 cub. yds.	No. 26—5.11 cub. yds.
No. 17—3.57 cub. yds.	No. 10—5.06 cub. yds.	No. 27—4.56 cub. yds.
No. 8—4.57 cub. yds.	No. 3—4.88 cub. yds.	No. 6—5.08 cub. yds.
No. 20—4.84 cub. yds.	No. 4—5.19 cub. yds.	No. 22—4.98 cub. yds.
No. 2—5.17 cub. yds.	No. 21—4.95 cub. yds.	
No. 15—5.36 cub. yds.	No. 13—5.08 cub. yds.	20 cars=99.02 cub. yds.
No. 28—4.71 cub. yds.	No. 30½—5.32 cub. yds.	Average, 4.95 cub. yds.
No. 25—5.37 cub. yds.	No. 5—5.08 cub. yds.	

The sides of Car No. 17 had opened and let out a considerable portion of the load. Casting out this car (as is probably fair), the nineteen remaining cars contain 98.92—3.57=95.35 cubic yards, or an average load of 5.02 cubic yards.

Cars measured loaded with sand; loads shaped for measurement on the dump after transportation one and one fourth miles. Loading had been done with steam scoop.

Sand Cars of A. Onderdonk.

Measured June 17, 1880, by Mr. F. A. Bishop, Chief Engineer.

Same memoranda as in case of cars measured July 1, 1880.

No. 1—4.72 cub. yds.	No. 6—5.49 cub. yds.	No. 10—5.82 cub. yds.
No. 2—4.99 cub. yds.	No. 7—5.52 cub. yds.	
No. 3—5.35 cub. yds.	No. 8—5.55 cub. yds.	Total—52.90 cub. yds.
No. 4—5.39 cub. yds.	No. 9—5.16 cub. yds.	Average, 5.29 cub. yds.
No. 5—4.91 cub. yds.		

Stone Cars of A. Onderdonk.

Measurements made June 25, 1880, by F. A. Bishop, Chief Engineer.

Cars of same dimensions as sand cars, only these stone cars have the side boards taken off.

Measurements made of loaded cars at the quarry; loads of stone shaped by hand for measurement very much as loads were shaped for measurement of sand loads.

No. 33—3.74 cub. yds.	No. 12—3.47 cub. yds.	No. 23—3.78 cub. yds.
No. 38—3.83 cub. yds.	No. 5—3.72 cub. yds.	
No. 1—3.75 cub. yds.	No. 21—3.63 cub. yds.	9 cars=34.38 cub. yds.
No. 2—4.20 cub. yds.	No. 52—4.26 cub. yds.	Average, 3.82 cub. yds.

Sand Cars of A. Onderdonk.

Measured May 17, 1881, by the Engineers, in presence of the Harbor Commissioners and Mr. L. E. Crane.

Loads shaped for measurement as in former cases mentioned.

At the dump.	No. 1—4.40 cub. yds.	
	No. 2—4.56 cub. yds.	
	No. 3—4.88 cub. yds.	
	No. 4—4.60 cub. yds.	
	No. 5—4.70 cub. yds.	
	No. 6—4.63 cub. yds.	
	Average, 4.63 cub. yds.	
At the pit where loaded.	No. 1—5.03 cub. yds.	
	No. 2—5.12 cub. yds.	
	Average, 5.075 cub. yds.	

It is explained that these measurements were made near the close of the work, when the scoop was being worked against a very low bank and consequently did not fill well.

Carts of Hancock & Kelso.

Measured by Mr. H. C. Holmes, Ass't Engineer, the day before work commenced on Section A.

Carts measured up to the plane even with the tops of the side boards. Cart-beds about 5.3 feet x 3.5 feet. Cart-beds one foot deep, side boards six inches high.

No. 1—24.00 cub. feet.	No. 9—24.95 cub. feet.	No. 17—26.78 cub. feet.
No. 2—26.26 cub. feet.	No. 10—26.09 cub. feet.	No. 18—27.15 cub. feet.
No. 3—24.78 cub. feet.	No. 11—26.09 cub. feet.	No. 19—27.14 cub. feet.
No. 4—26.76 cub. feet.	No. 12—26.89 cub. feet.	No. 20—26.63 cub. feet.
No. 5—26.60 cub. feet.	No. 13—26.09 cub. feet.	No. 21—26.59 cub. feet.
No. 6—26.61 cub. feet.	No. 14—26.72 cub. feet.	No. 22—27.03 cub. feet.
No. 7—25.73 cub. feet.	No. 15—26.42 cub. feet.	
No. 8—26.09 cub. feet.	No. 16—26.42 cub. feet.	577.88 cub. feet.

Average capacity per cart 26.26 cubic feet to level of side boards. Inspectors instructed to have carts loaded at least one inch above the level of the side boards.

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Carts of A. Onderdonk.

Measured April 30, 1880, by F. A. Bishop, Chief Engineer.

Carts with side boards all flaring. Loads considered a prism of trapezoidal section up to level of the tops of side boards. Loads considered a pyramid above level of side boards.

No. 5—1.003 cub. yds.	No. 17—1.02 cub. yds.	No. 11—1.07 cub. yds.
No. 7—1.02 cub. yds.	No. 1—1.08 cub. yds.	No. 9—0.92 cub. yds.
No. 18—1.05 cub. yds.	No. 4—1.23 cub. yds.	
No. 12—1.07 cub. yds.	No. 6—0.97 cub. yds.	14 carts—14.648 cub. yds.
No. 22—1.005 cub. yds.	No. 26—1.04 cub. yds.	Average—1.045 cub. yds.
No. 3—1.11 cub. yds.	No. 13—1.06 cub. yds.	

Carts of Hancock & Kelso.

Measurements made June 24, 1880.

No. A—1.52 cub. yds.	No. 20—1.29 cub. yds.	No. 32½—1.19 cub. yds.
No. 39—1.36 cub. yds.	No. 34—1.35 cub. yds.	No. 17—1.25 cub. yds.
No. 16—1.32 cub. yds.	No. 42—1.57 cub. yds.	No. 41—1.22 cub. yds.
No. 32—1.16 cub. yds.	No. 28—1.26 cub. yds.	No. 24—1.23 cub. yds.
No. 7—1.17 cub. yds.	No. 33—1.36 cub. yds.	No. 22—1.26 cub. yds.
No. 584—1.42 cub. yds.	No. 13—1.38 cub. yds.	No. 18—1.03 cub. yds.
No 28—1.23 cub. yds.	No. 43—1.20 cub. yds.	

20 carts=25.77 cub. yds. Average, 1.289 cub. yds.

Wagons.

Measured by Tilton, Supervisor of Construction, Section 2. (Record in a tally or memo. book.)

Twenty-two wagons ranged from 1.5 to 1.8 cubic yards, averaging 1.6 cubic yards.

Cars.

Measured by Tilton. (Memorandum book.)

5.61 cub. yds.	5.14 cub. yds.	5.17 cub. yds.	5.20 cub. yds.
4.67 cub. yds.	5.66 cub. yds.	5.04 cub. yds.	4.79 cub. yds.
5.33 cub. yds.	4.94 cub. yds.	5.02 cub. yds.	4.76 cub. yds.

Average, 5.108 cub. yds.

Cars.

Measured by Tilton. (Memorandum book.)

4.24 cub. yds.	4.14 cub. yds.	3.89 cub. yds.	4.58 cub. yds.

Average, 4.21 cub. yds.

Memorandum in his book counts car loads of stone, put in Section 2 April 5 to 12, 482 at 4.21 cubic yards per load. Also, wagon loads at 1.76 cubic yards per load.

APPENDIX C.

Amounts of Overwork and Changes from Estimated Plans.

SEA-WALL AND EMBANKMENT.

Quantities saved or made necessary by changes in plan and cross section.

Stone Wall.

Section A—Change in cross section end wall; additional amount made necessary; estimated to hard bottom plane. (Uhlig.)	6,180 cub. yds.
Change in plan; shortening front line and wall; amount cut out from wall as estimated. (Uhlig.)	1,696 cub. yds.
Difference between the above	4,484 cub. yds.
Amount reduced to estimate to "hard mud" plane, to which the wall probably (according to our estimates) sank, which amount we use as a reduction in correcting the result in this section for comparison with the estimates, etc.	4,120 cub. yds.
Extra stone found on face of section	7,350 cub. yds.
Extra stone made necessary by change in cross section of the wall. (Bishop)	1,040 cub. yds.
Total amount of correction for extra stone work in this section	12,510 cub. yds.
Section 4.—*End Wall*, twenty feet wide on top, slopes one on one; amount of stone delivered, vehicle measurement, after making due allowance for amount due for the pitching paid for as earth. (Holmes.)	10,380 cub. yds.
Deducting 20 per cent. from above to reduce to measurement in the wall	8,304 cub. yds.
Cross Section change. (Bishop.)	1,851 cub. yds.
Overwork on face	6,500 cub. yds.
Total correction	16,655 cub. yds.
Section 3.—*Cross Section* change. (Bishop.)	1,000 cub. yds.
Overwork on face	8,326 cub. yds.
Total correction	9,326 cub. yds.

Earth Work.

Section A.—Plan of work; additional earth made necessary by the change in. (Uhlig.)	807 cub. yds.
Cross Section.—Saving in earth made by change in. (Bishop.)	2,695 cub. yds.
The difference between the above, used as a plus quantity in correcting result for comparison	1,888 cub. yds.
Section 3.—*Trench Filling* (car measurement)	60,000 cub. yds.
The above amount reduced to measurement in the wall	48,000 cub. yds.
Cross Section.—Saving in earth made by change in. (Bishop)	2,037 cub. yds.
The difference between the above amounts, used as a minus quantity in correcting the result in this section	45.963 cub. yds.
Section 4.—*End Wall.* Amount of earth saved by introduction of a stone end wall (bank measure)	8,304 cub. yds.
Cross Section.—Amount of earth saved by change in cross section. (Bishop)	4,812 cub. yds.
Sum of the above amounts used as a plus quantity in correcting result in this section	13,116 cub. yds.

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REPORT

OF

LAUREN E. CRANE,

EXPERT,

ON THE

CONSTRUCTION OF THE SEA-WALL,

SAN FRANCISCO.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

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REPORT.

His Excellency GEORGE C. PERKINS, *Governor of California:*

I have completed the task assigned to me, of examining into the affairs of the State Harbor Commissioners, and beg leave to respectfully report as follows:

I found the many books of account, and the voluminous records, papers, and maps of the Commissioners, well arranged and carefully kept.

The system of office work originally devised, since elaborated and now in force, is one that makes of public and enduring record the history in minute detail of every transaction of the Board, whether in collecting revenue or expending it, and involves the daily necessity on the part of the subordinates of methodical and complete work. Such work is apparent upon the face of every book, with a few trifling exceptions and errors of no public importance, and, being analyzed and tested beneath the face of it in a variety of ways for fraud, concealment, or irregularity, yields conclusive proof of its accuracy and honesty. The records appear to be from the beginning as progressive and complete as the multiplication table. Nothing is missing. No forced balances have been made, nor any alterations to cloak accidents or veneer with symmetry irregular entries. The books are an honor to the Commissioners who are responsible for them, and a credit to those who have had and now have the direct charge of them.

The business system of the Board, in relation to the many wharves and outside employés, is one of effective checks and balances, except as it relates to the collection of tolls; it renders the perpetration of fraud, at any other point, difficult, the detection of it comparatively easy. As the result of careful observation, study, and deductions from comparative tables prepared for the purpose and checked by outside commercial records, I do not hesitate to pronounce the revenue under control of the Board to have been faithfully collected and accounted for from all sources except that of tolls.

This question of tolls and wharfage I have not attempted to decide nor to investigate, except at salient points and in a cursory way, for the reason that any possible analysis of it, reaching a conclusion founded upon facts and figures, would require several months of constant work and would finally be of little practical value. There is no adequate check upon toll collectors; if they are honest they will make full collections and faithful returns. If they happen to be disposed to favor friends or to steal, in a limited way, the possibility of espoinage is their greatest earthly danger. In a report I had the honor to make to the Governor, several years ago, I pointed out this weakness in the adopted system clearly. The official reports of the

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Harbor Commissioners, and their efforts to obtain adequate legislation since then, show that they fully understand the question and would be glad to guard this source of their revenue without sacrificing it.

DOCKAGE OF VESSELS.

The Board derives the greater portion of its receipts from dockage paid upon vessels. To determine whether any officer or subordinate of the Board had neglected either to properly collect or to accurately report such receipts, I selected several instances at every wharf during each month for the full period of two years—1879 and 1880; and by the aid of the consignees of the vessels, who promptly, with a few exceptions, gave me their statements in writing, I was enabled to thus reach a conclusion. This test probed the books at five hundred selected points, embraced every wharf and wharfinger, included all classes of vessels, involved large payments and small ones, and demanded and received the written testimony of almost every prominent consignee in San Francisco—to whom I desire to express my sincere thanks for courteous responses to my requests. In this respect I am under especial obligations to Balfour, Guthrie & Co. for a voluminous and comprehensive statement made of vessels consigned to them, by means of which I was enabled to traverse the books for a different and important purpose, and without which I would have been at a loss to decide a very relevant question.

It gives me pleasure to report that I have been unable to uncover any frauds, or to detect the semblance of any, by means of these searching tests. Occasional errors have occurred, as a matter of course; but the discrepancies, being traced out, have proved to be errors simply.

Volume "A" of the appendix to this report contains the statements of consignees alluded to, and the corresponding entries in the books of the Commissioners, with annotations; and copies of all correspondence are transmitted herewith.

GENERAL MATTERS.

Concerning the many wharves built by contract, the money expended for dredging, fire-tugs, urgent repairs, sheds, ferry slips, and other structures and trusts under control of the Board, involving large expenditures, I have to report that, under your instructions, I have cursorily examined them all so far as regularity and honesty upon the face of them is concerned; and have found nothing to warrant me in recommending analytic investigation of them. But, I have gone no further than such beginning, and must therefore, of necessity, decline to intimate—much less assert—any opinion, inferential or otherwise. The province of an expert accountant lies within the boundaries of ascertained and irrefragable facts and figures. In relation to these expenditures, I have stopped at the threshold of investigation. Within the scope of my work and the time allotted for its completion, it has not been possible for me to do otherwise.

THE SEA-WALL.

In compliance with your instructions I have made a rigorous examination and study of the records of the Commissioners relating

to constructing and widening the various sections of the sea-wall, and of all correlative facts concerning the contracts and the manner of their fulfillment, so far as I could ascertain them. Every detail of each contract, from the beginning of work in November, 1878, to the close of May, 1881, will be found in appendices "B" and "C" to this report, synopsized in tabular form and arranged for purposes of comparison. The plan of the sea-wall is:

First—A stone embankment along the outer line, which embankment is ten feet wide on the flat top; thence the outward slope is arbitrary, and is carefully laid by hand with selected stones for fifteen feet, or to low-water line; whence to the bottom the slope is the natural one assumed by the stone in falling. The inner slope of this embankment is also the natural one.

Second—A wharf fifty-one to sixty feet wide, the inner line of which is coincident with that of the flat top of the stone embankment.

Third—An embankment of earth closing against the inner face of the stone embankment, and extending inland a width of forty feet, or one hundred and forty-nine feet, as the case may be, the entire legal width of the completed sea-wall being 200 feet, as shown by the typical cross section of it, and by the complete diagram of it transmitted herewith. Such earth embankment has the natural slope, and is effectively faced and paved with stone.

By way of preparatory work, and in addition to engineering data already known, the Board determined, as nearly as possible the depth of water, and character of the bottom along the line of the sea-wall by means of 2,372 soundings, and 260 borings taken between Powell and Pacific streets. The results of these were laid down on the maps in the office, and repeatedly during each month cross sections of the sea-wall in process of construction were made and delineated on the working plans.

In every instance the law in relation to advertising for bids was strictly observed, and the contract was awarded to the lowest bidder, The reserved power to reject all bids and privilege of advertising anew never was exercised.

In the specifications of the work, the Board reserved to itself, through its engineer, complete power over the contractor. A condition of each contract was: "The work will be done under the supervision of the Chief Engineer of the Board, and all questions and disputes with regard to the intent and interpretation of these specifications, and the estimates and measurements of materials and work shall be referred to him, and his decision thereon shall be final."

Section 1

Begins at the east line of Kearny street and extends westward.

The contract for constructing it, 1,000 feet long by ninety-one feet wide, including the wharf, was awarded to Andrew Onderdonk, September 13, 1878, Commissioners Blanding, Burns, and Lee being present, at $96 per lineal foot.

The other bidders were:

Hancock and others	$148 per lineal foot.
J. R. Meyers & Co.	115 per lineal foot.
Ashley H. Ball	97 per lineal foot.

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Work was begun in November, 1878, and it was completed in July, 1879. Partial payments were made to the contractor monthly during the progress of the work, upon estimates made by the Engineer of the Board, showing the proportional amount of work done.

The original estimates, based upon soundings and borings, and complete calculations of areas checked by cross sections of the work delineated on the plans of eleven points, rated the stone embankment at sixty-five cents per cubic yard, and the earth embankment at thirty cents per cubic yard; but from measurements made in February, 1879, the number of cubic yards was increased, the prices diminished, and the following results obtained:

ENGINEER'S ESTIMATES.

Stone embankment—90,327 cubic yards @ 60 cents	$54,196 00
Earth embankment—79,000 cubic yards @ 27 7/10 cents	21,900 00
Wharf—742 piles @ $12	8,904 00
Wharf—550,000 feet of lumber @ $20	11,000 00
Total	$96,000 00

Following are the

CONTRACTOR'S RESULTS.

Stone embankment—90,327 cubic yards @ 60 cents	$54,196 00
Earth embankment—79,000 cubic yards @ 27 7/10 cents	21,900 00
Wharf—742 piles @ $12	8,904 00
Wharf—550,000 feet of lumber @ $20	11,000 00
Total	$96,000 00

This was the first work done on the new sea-wall. The salient features of it are noticeable for purposes of comparison with those of contracts filled subsequently. The work was done by the lineal foot, and the specifications provided: "No extra allowance beyond the amount of the proposal shall be claimed or allowed on account of errors or under estimates in the quantities of stone, earth, or materials, founded, or alleged to be founded, on erroneous data shown in the plans and sections." Therefore, of necessity, the estimates and the results were exact counterparts. In contracts made afterwards this paragraph was omitted in the specifications, because the work was done by the cubic yard instead of by the lineal foot of sea-wall.

The uncertain character of the bottom, with its strata of soft mud, sand, or stiff mud, varying in thickness at every cross-section calculated, and at all intermediate points, constituted the apparent reason for abandoning the inexpansive lineal foot basis of contract, and adopting the compound features of elasticity involved in that of the cubic yard.

This section, the first constructed, was open on each side, and at both ends until the connecting embankment at Kearny street was completed; and thus afforded the soft mud, and the sand, or stiff mud, (and the hard bottom it may be) the maximum of opportunity to yield to vertical pressure of embankments, and to escape laterally.

But it does not appear from the records that any unexpected quantity of material was thus displaced from the bottom. By the engineer's estimates it required 90,327 cubic yards of stone to construct the embankment, assuming it to sink to sand, and 109,674 cubic yards admitting it would sink to hard bottom. By his progressive estimates and reports of work done from month to month, and by

his final report, and by the contractor's complete result, this stone embankment rested upon the sand, and stopped by an area of 19,347 cubic yards—or $11 60 per lineal foot—short of hard bottom; and the earth embankment also rested upon the sand.

It will be seen, by comparison, that the uncertain character of the bottom became more apparent in subsequent contracts.

Section 2

Begins at the easterly end of Section 1, and extends eastward 1,000 feet. The original contract included the stone embankment, the wharf, and an earth embankment forty feet wide—a total width of ninety-one feet; and included also a connecting embankment of an area of 42,176 cubic yards to hard, stiff mud, or 67,152 cubic yards to hard bottom, at Montgomery and Bay streets.

The contract was awarded to Andrew Onderdonk, November 5, 1878, at forty-six cents per cubic yard for stone, twenty cents per cubic yard for earth, and $20,000 for the wharf; Governor William Irwin, Mayor A. J. Bryant, and Commissioners Blanding, Burns, and Lee were present. The other bids were:

Ashley H. Ball	Wharf, $20,000; stone, 48 cents; earth, 22 cents.
McLenon & Wing	Wharf, 17,000; stone, 48 cents; earth, 30 cents.
Hancock & Kelso	Wharf, 20,250; stone, 49 cents; earth, 30 cents.

Work was begun in February, 1879, and the contract was completed in January, 1880. The engineer's calculations of areas were as follows:

Stone embankment to hard, stiff, mud	109,152 cubic yards.
Stone embankment to hard bottom	139,485 cubic yards.
Earth embankment to one third depth of mud	113,797 cubic yards.
Earth embankment to hard bottom	172,134 cubic yards.

And as a basis for bids the following were the

ENGINEER'S ESTIMATES.

Stone embankment	120,000 cubic yards.
Earth embankment	120,000 cubic yards.
Wharf	742 piles and 550,000 feet of lumber.

Following are the

CONTRACTOR'S RESULTS.

Stone embankment, 142,739 cubic yards @ 46 cents	$65,659 94
Earth embankment, 157,352 cubic yards @ 20 cents	31,470 40
Wharf, 742 piles @ $12 13	9,000 00
Wharf, 550,000 feet of lumber @ $20	11,000 00
Total	$117,130 34

In this contract the contractor surpassed the estimate of the engineer, as a basis for bids, by 22,739 cubic yards of stone, or $10,459 94, and exceeded the estimate to hard bottom by 3,254 cubic yards, or $1,496 84; and in the earth embankment, exceeded the estimate to to one third the depth of mud by 43,555 cubic yards, or $8,711, but he stopped short of hard bottom by 14,782 cubic yards, or $2,956 40, with this earth embankment; in subsequent contracts he was unable to do so, or to even pause at hard bottom, as will appear in analysis given hereinafter.

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Widening Sections 1 and 2.

Sections 1 and 2, as above described, were constructed ninety-one feet wide from the outer line of the wharf over the stone embankment to the inner line of the earth embankment. The Board decided to widen these sections by means of an earth embankment 109 feet wide to the full legal width of 200 feet.

On the twenty-seventh of August, 1879, the contracts for such work were awarded to Andrew Oderdonk, at 29 9/10 cents per cubic yard for Section 1, and thirty cents per cubic yard for Section 2. There were present Mayor A. J. Bryant, and Commissioners Blanding, Burns, and Lee. The other bids were:

Hancock & Kelso	for Section 1, 33½ cents;	for Section 2, 33½ cents.
Lemon & Wing	for Section 1, 35 cents;	for Section 2, 35 cents.
W. H. Martin & Co.	for Section 1, 36½ cents;	for Section 2, 37½ cents.

The stratum of soft mud was now left out of the account in preparing estimates, and areas were calculated to hard, stiff mud, and to hard bottom.

For Section 1, the engineer's estimates were: Earth embankment to hard, stiff mud, 145,189 cubic yards; earth embankment to hard bottom, 167,798 cubic yards; and his estimate as a basis for bids was 146,000 cubic yards. This estimate appears to have admitted that the embankment would sink to hard, stiff mud, and to have assumed that it would rest there. But it did not. It sank through 22,609 cubic yards—$6,760 10 worth—of hard, stiff mud, and penetrated hard bottom 65,083 cubic yards, or $19,459 82 worth; the contractor having pressed into the embankment 232,881 cubic yards, or 87,692 more than was contemplated, and having received $69,631 42 for the work, or $26,219 92 in excess of the primary calculation.

Similar diligence on the part of the contractor was maintained in widening Section 2.

For this the engineer's estimates were: Earth embankment to hard, stiff mud, 107,712 cubic yards; earth embankment to hard bottom, 130,025 cubic yards; and his estimate as a basis for bids was 110,000 cubic yards.

The contractor's result was 167,912½ cubic yards—the odd half yard showing a strong tendency towards conscientious measurement. In other words, the embankment settled through 22,313 cubic yards of hard, stiff mud—$6,693 90 worth; and into hard bottom, 37,887½ cubic yards, or $11,366 25 worth; exceeding the original calculations by 60,200 cubic yards of earth, and $18,060.

At this point I respectfully direct your attention to the diagram of the sea-wall contained in Appendix "B," for in considering these results it is pertinent to note that, while facility for "mud," and "hard, stiff mud," and "hard bottom" to escape laterally under vertical pressure was unlimited during the construction of Section 1, and was measurably so during that of Section 2, and did not fully improve the complete opportunity, such was not the case with these embankments. The conditions were different and compel recognition.

The original sea-wall, along the outer line, was completed; so were the connecting embankments at Kearny street and at Montgomery and Bay streets; and, shortly before the contracts were fulfilled, work was in progress at either end, on Section 3 and Section "A."

Calculations of contents of embankments are clearly apt to be

defective, and to require revision, when their foundations are of uncertain character, and their outer faces touch nothing of greater resisting power than air and water; but when such embankments fall within and against fixed and impregnable walls, on three sides out of four, there remain beyond the reach of exact figures only the open side and the variable bottom, and the upheaval of the former must coincide with and account for the subsidence of the latter.

Inasmuch as the stone embankment of the sea-wall, and the connecting embankments named, preserve with marked rigidity their true alignments and maintain their original positions undisturbed, it may be assumed that the two strata of mud and the segments of hard bottom did not escape under them. And it may be justly inferred, too, that the flanking sections did not receive the 147,892 cubic yards displaced. Section "A" required only 100,737 cubic yards, and Section 3 only 150,000 cubic yards of earth embankment; and the contractors therefor found it necessary not only to supply it all themselves, but to furnish also much more. The displacement, therefore, must have escaped inland.

Section 3

Begins at the easterly end of Section 2, and extends eastward 1,000 feet. In general outline and detail of construction it is the counterpart of Sections 1 and 2, to the width of ninety-one feet.

The contract for constructing it was awarded to Andrew Onderdonk, January 25th, 1879, at $20,000 for the wharf, sixty-five cents per cubic yard for stone, and twenty-five cents per cubic yard for earth. There were present, Governor William Irwin, and Commissioners Blanding, Burns, and Lee. The other bids were:

Hancock & Kelso	wharf, $22,000;	stone, 80 cents;	earth, 35 cents.
Pacific Bridge Company	wharf, 21,490;	stone, 70 cents;	earth, 33½ cents.
Lemon & Wing	wharf, 22,000;	stone, 75 cents;	earth, 30 cents.

Work was begun in January, 1880, and completed in January, 1881. The engineer's calculations of areas were:

Stone embankment, to stiff mud	99,057 cubic yards.
Stone embankment, to hard bottom	155,007 cubic yards.
Earth embankment, to one third depth of mud	117,095 cubic yards.
Earth embankment, to stiff mud	151,031 cubic yards.
Earth embankment, to hard bottom	196,840 cubic yards.

And his estimates as a basis for bids were:

Stone embankment	150,000 cubic yards.
Earth embankment	150,000 cubic yards.
Wharf	742 piles, and 550,000 feet of lumber.

Following are the

CONTRACTOR'S RESULTS.

Stone embankment, 187,912 cubic yards @ 65 cents	$122,142 80
Earth embankment, 229,265 cubic yards @ 25 cents	57,316 25
Wharf, 742 piles @ $12 13	9,000 46
Wharf, 550,000 feet of lumber @ $20	11,000 00
Total	$199,459 51

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Being analyzed, this shows that the stone embankment went through 55,950 cubic yards of stiff mud, $36,367 50 worth, and displaced 32,905 cubic yards of hard bottom, $21,388 25 worth; and the earth embankment, which was assumed to rest at one third the depth of mud, pressed out the remaining two thirds of that stratum, 33,936 cubic yards, $8,484 00 worth; continued down through 45,809 cubic yards of stiff mud, $12,452 25 worth; and compressed the hard bottom 32,425 cubic yards, $8,106 25 worth.

Recapitulated, the account shows that the contractor was unable to do the work within 201,025 cubic yards, or $86,798 25 of the minimum calculation, and was constrained by the uncertain character of the bottom to exceed the engineer's estimates by 117,177 cubic yards or $44,459 51.

Section A

Is the westerly continuation of Section 1 to the west line of Powell street. It is 561 feet long, by the full legal width of 200 feet, and consists of the stone embankment, the wharf, and the inner earth embankment which characterize the sections above described. The contract for constructing it was awarded to J. S. Emery, December 18, 1879, at $14,800 for the wharf; fifty-three cents per cubic yard for stone, and twenty-four cents per cubic yard for earth.

The other bids were:

A. Onderdonk	Wharf, $13,750; stone, 64 cents; earth, 28$\frac{9}{10}$ cents.	
Pacific Bridge Company	Wharf, 15,000; stone, 66$\frac{2}{3}$ cents; earth, 30$\frac{1}{2}$ cents.	
Hancock & Kelso	Wharf, 15,500; stone, 70 cents; earth, 32 cents.	

There were present Governor William Irwin, and Commissioners Blanding, McCoppin, and Lee.

Pending the consideration of the bids, Mr. McCoppin moved: "That all the bids be rejected without opening them, in order that a provision might be inserted in the specifications requiring alternative bids, the one by the cubic yard, the other a specific sum for the whole work; the board to award the contract in either alternative at their pleasure." A vote being taken on the motion, it was lost by the following vote: Governor Irwin and Commissioners Blanding and Lee voted no; Commissioner McCoppin voted aye.

Work was begun on this section in March, 1880, and was completed, including additional work under a special contract, in November, 1880.

THE ENGINEER'S CALCULATIONS.

Stone embankment to hard mud	40,370 cubic yards.
Stone embankment to hard bottom	55,956 cubic yards.
Earth embankment to hard mud	76,664 cubic yards.
Earth embankment to hard bottom	100,737 cubic yards.

And his estimates as a basis for bids were:

Stone embankment	55,956 cubic yards.
Earth embankment	100,737 cubic yards.
Wharf, 457 piles, and 350,083 feet of lumber.	

Following are the

CONTRACTOR'S RESULTS:

Stone embankment	73,793 cubic yards @ 53 cents		$39,110 29
Earth embankment	123,767$\frac{2}{3}$ cubic yards @ 24 cents		29,704 24
Wharf	474 piles @ $14		6,636 00
Wharf	340,167 feet of lumber @ $24		8,164 00
Total			$83,614 53

From this it appears that the contractor exceeded the minimum estimates by 80,526$\frac{2}{3}$ cubic yards of materials, and by $29,019 07; and exceeded the maximum estimates by 40,837$\frac{2}{3}$ cubic yards, and by $14,980 99. But it is to be taken into the account that the Board ordered additional necessary work to be done, beyond the original scope of the contract, thus impairing the estimates, and perhaps fully justifying the excess.

Section 4.

This section is now in process of construction, and will probably be completed within one month. It will be 1,000 feet long, extending from the easterly end of Section 3, and the full width of 200 feet; the wharf being sixty feet wide.

The contract for constructing it was awarded to Andrew Onderdonk, March 27, 1880, at $24,500 for the wharf, sixty-nine and a half cents per cubic yard for stone, and thirty-four cents per cubic yard for earth. There were present, Mayor I. S. Kalloch, and Commissioners Blanding, Evans, and Phillips. The other bids were:

Hancock & Kelso, wharf	$25,000; stone, 70 cents; earth, 35$\frac{1}{2}$ cents;	
Pacific Bridge Co., wharf	23,500; stone, 73 cents; earth, 35 cents.	

The engineer's calculations of areas were:

Mud underneath stone embankment	103,545 cubic yards.
Stone embankment to stiff mud	72,011 cubic yards.
Stone embankment to hard bottom, less 30 per cent. of mud	101,928 cubic yards.
Stone embankment to hard bottom	132,993 cubic yards.
Mud underneath earth embankment	236,930 cubic yards.
Earth embankment to stiff mud	195,255 cubic yards.
Earth embankment to hard bottom, less 30 per cent. of mud	287,763 cubic yards.
Earth embankment to hard bottom	358,448 cubic yards.

And his estimates as a basis for bids were:

Stone embankment	133,000 cubic yards.
Earth embankment	330,000 cubic yards.
Wharf	520 piles to be removed; 742 piles to be driven; 567,000 feet of lumber.

The building of a return embankment of stone at the easterly end of this section, made advisable by the temporary cessation at that point of work upon the sea-wall, has naturally required more cubic yards of stone than was estimated for; taking which fact into consideration it appears probable, at the date of this report, that the section will be completed within the estimates. Whether such would have been the case if the Board had not recently directed the attention of employés and others to the propriety of modifying the system of accounting for, and amplifying the method of loading the cars and carts in use, is a question that suggests itself. Between expansion at the foundation and contracting at the surface of the several sections, it is difficult to pass beyond inference and enter the domain of conclusion based upon proof.

THE CUBIC YARD QUESTION.

I find of record in the office, measurements of cars and carts made by authority of the Board, as follows:

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April 30, 1880—Stone, 22 carts, loads level with sideboards	577.88	cubic feet.
Average	26.26	cubic feet.
14 carts	39.09	cubic yards.
Average	3.25	cubic yards.
June 17, 1880—10 cars	52.90	cubic yards.
Average	5.29	cubic yards.
June 24, 1880—Stone, 20 carts	25.77	cubic yards.
Average	1.28	cubic yards.
June 25, 1880—Stone, 9 cars	34.38	cubic yards.
Average	3.82	cubic yards.
July 1, 1880—Sand, 20 cars	98.92	cubic yards.
Average	4.95	cubic yards.

These recorded capacities of vehicles are elaborately worked out by algebraic formulas, illustrated by diagrams drawn to scale.

The cars in use have been decided to contain an average of five cubic yards each. Loaded flush with their sideboards, they will contain about three and one half cubic yards, and on top of that, will readily receive and transport one and one half yards more. It is undoubtedly true, that when fairly loaded at the sand pit with two full charges of the scoop worked by steam-power, each car will contain five cubic yards. The visible leaks in every car, and the facility with which the sand can escape from the top, render it equally certain that there must be a constant percentage of loss in transportation.

It seems fully as apparent that the real question of interest is, not what the cars could be made to hold under test conditions, but what they have been made to receive and deliver during the progress of the work, and whether they have been counted correctly.

The Commissioners have entrusted to supervisors of construction and tally clerks, appointed by the Board, the duty of recording daily the amount of contract work done. Upon their reports the engineer's progressive estimates have been based, and upon the reports of the engineer the Board have made partial payments, monthly, to the contractor. Under this system it was possible for a few men, either through negligence or deliberate calculation, to make a cubic yard breed itself in several ways, and to compel the contractor to receive more money than he was expecting, or than a true accounting would entitle him to. By reporting a few imaginary trains daily, or adding a few cars on paper to each train, or permitting light loads to pass unchallenged, a tally clerk could perplex the engineer, and by blending all three processes could surprise the contractor.

Early in March last, owing to a watch placed upon them and a check kept against their returns, there was a significant discrepancy in the accounting of two tally clerks; no formal investigation of the matter appears of record. The amount of material fraudulently reported was deducted from the contractor's account, and the clerks were discharged.

Perhaps the incident disclosed a glimpse of systematic work. It may possibly be that the differences hereinabove shown between engineers' estimates and contractors' results are owing less to the uncertain character of the bottom than to the uncertain nature of a cubic yard at the top of the embankments.

On the seventeenth of last month, by invitation of the Board, I accompanied the Commissioners, the Engineer of the Board and his assistant, and Wm. P. Humphreys, C. E., to the sea-wall, at Section 4, now in the process of construction, and there witnessed the stopping of an incoming train of cars loaded with sand, and the careful measurement of six out of the twenty-six cars that composed it.

The six cars selected were undoubtedly a fair average of the whole. They measured as follows:

Car No. 1	4.40 cubic yards.
Car No. 2	4.56 cubic yards.
Car No. 3	4.88 cubic yards.
Car No. 4	4.60 cubic yards.
Car No. 5	4.77 cubic yards.
Car No. 6	4.63 cubic yards.

A total of 27.84 cubic yards, or an average of 4.64 cubic yards.

Thence we proceeded to the sand-pit where the cars were loaded, and there measured two newly loaded cars. It was apparent that the cars thus measured would give a fair average of the whole train, since the conditions of loading were practically exact throughout. They contained: Car No. 1, 5.03 cubic yards; Car No. 2, 5.12 cubic yards.

Several deductions are possible from these figures. On the face of them it appears that the cars, when properly loaded, contained more than 5 cubic yards each at the pit; but contained, upon arriving at the sea-wall, 4.64 cubic yards, or $7\frac{1}{5}$ per cent. less than the 5 cubic yards allotted to them.

If the true rule of measurement might be justly deduced from this isolated instance of it, the contractor has been overpaid, on earth embankments alone, as shown by this table:

On Section 2	157,352	cubic yards	$31,470 40
On Section 3	227,796	cubic yards	56,949 00
On Section 4, to April 30, 1881	136,857½	cubic yards	46,531 56
On widening Section 1	232,881	cubic yards	69,631 42
On widening Section 2	167,912½	cubic yards	50,373 75
Totals	922,799	cubic yards	$254,956 13

Seven and one fifth per cent. of which is, $17,356 84.

But, on the day named, the cars were on dress parade. They were loaded for the occasion. Long before our arrival the visible fact was a matter of common notoriety and comment at the sea-wall; and at the sand-pit where the cars were loaded, three men were engaged in the novel work of fashioning the loads into solid proportions by means of shovels.

By what accident this came about, I do not know; the fact I am prepared to substantiate.

I have no choice then, but to reject the test, and to revert to facts and figures already given for an inferential conclusion in relation to the cubic yard question.

A review of these shows that the engineer's calculations of areas, and consequent estimates, for embankments, were based upon ascertained data, involved repeated computations of cross-sections, and contained allowances for probable excess, and that the contractor exceeded such estimates, as follows:

On Section 2,	59,991	cubic yards	$17,910 34
On Section 3,	115,708	cubic yards	44,091 80
On widening Section 1,	86,881	cubic yards	25,978 42
On widening Section 2,	57,912½	cubic yards	18,073 60
Totals	320,492½		$106,054 16

In the same contracts the minimum estimates were exceeded by 424,490½ cubic yards, or $153,962 08; and the maximum estimates to

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hard bottom for both stone and earth embankments, were exceeded by 166,831½ cubic yards, or $59,957 72.

For reasons already given, Sections A and 4 are excluded from these calculations.

The bidders who have contested for the various contracts have been but few, all told. The successful ones have obtained harmoniously progressive prices per cubic yard for materials furnished, as shown below:

ANDREW ONDERDONK.

November 5, 1878—Section 2	46 cents for stone;	20 cents for earth.
January 25, 1879—Section 3	65 cents for stone;	25 cents for earth.
August 27, 1879—Widening Section 1	(none);	29 9/10 cents for earth.
August 27, 1879—Widening Section 2	(none);	30 cents for earth.
May 27, 1880—Section 4	69½ cents for stone;	34 cents for earth.

J. S. EMERY.

December 18, 1879—Section A	53 cents for stone;	24 cents for earth.

Sections 1, 2, and 3, as originally constructed, were counterparts in outline and detail, one with the other. Each was 1,000 feet long by by ninety-one feet wide.

Casting out of the consideration the cost of the several connecting embankments, the changes of slope, and extra work, the comparative cost per lineal foot was as follows:

Section 1—Contract let by the lineal foot; stonework estimated at 60 cents, and earthwork estimated at 27 7/10 cents per cubic yard	$96 00 per foot.
Section 2—Contract let by the cubic yard, at 46 cents for stone and 20 cents for earth	108 69 per foot.
Section 3—Contract let by the cubic yard, at 65 cents for stone and 25 cents for earth	143 31 per foot.

The comparative cost of the sections when complete, 200 feet wide, is:

Section A complete, 561 feet long by 200 feet wide	$152 61 per foot.
Section 1 complete, 1,000 feet long by 200 feet wide	165 63 per foot.
Section 2 complete, 1,000 feet long by 200 feet wide	167 50 per foot.
Section 3 remains unfinished.	
Section 4 complete, 1,000 feet long by 200 feet wide (estimated)	229 00 per foot.

While contemplating these cubic yard swellings, it should be remembered that in all of the calculations of areas and the various estimates made during the work, the words "soft mud," "mud," "sand," "hard mud," "hard, stiff mud," and "hard bottom" have been used as relative expressions, and not as descriptive terms with fixed value of meaning; also, that the depth of water increases along the line of the sea-wall, eastward from the initial point at the west line of Kearny Street.

I have laboriously traversed many of the calculations in the preliminary work, in a deliberate attempt to detect error, or to expose something wrong—something hidden. I have been unable to find either error or fraud therein, and fully believe that all of them may be accepted as reliable.

These facts, and the more precise engineering data obtained in the earlier part of the work, account naturally for progressive liberality in the estimates, but not for the violence done them in the results. This is discernible more particularly in the comparative cost of the earth embankments.

Section 1 was constructed under conditions of contract that forbade excesses, and none occurred. The other sections, excepting No. 4, were constructed under conditions that caused the State to pay $93,338 30 for 350,720 cubic yards of earth in excess of reasonable calculation; or, to pay in excess of the engineer's estimates, as follows:

EARTH EMBANKMENTS.

Excesses of Results over Estimates.

On Section A,	23,030 cubic yards,	$5,527 20,	or 22 per cent.
On Section 2	37,352 cubic yards,	7,740 00,	or 32 per cent.
On widening Section 2	57,912½ cubic yards,	17,373 75,	or 52 per cent.
On Section 3	79,265 cubic yards,	19,816 25,	or 52 per cent.
On widening Section 1	86,881 cubic yards,	25,977 42,	or 59 per cent.
Totals	284,440½ cubic yards.	$76,434 62	

The average excess was forty-three per cent.

By parity of reasoning it would seem that the earth embankment in Section 4 ought also to contain forty-three per cent. more than the engineer's estimate, or 471,900 cubic yards. But that embankment is now virtually completed, and really will contain, when fully so, about 205,000 cubic yards, a difference of 266,900 cubic yards, or $90,746, which amount has been thus saved to the State. The contractor stops short of even the engineer's estimate by 125,000 cubic yards, or $42,500.

In the absence of any other perceptible cause, this probable loss to the contractor must be attributed, in part at least, to the discouraging glare of the investigation ordered by your Excellency.

By the terms of the contracts the Board has uniformly reserved twenty-five per cent. of the prices paid, only making final payments three months after completion of the work. This reservation was precautionary against possible subsidence of embankments. Final payments have been promptly made at the close of the prescribed three months, and there is no record of any subsidence or settling down of any completed embankment, excepting 1,469 cubic yards in Section 3. Thus the uncertain character of the bottom apparently disappears, and the finished sea-wall rests upon a firm foundation.

CONCLUSION.

The Commissioners, as a body and individually, and all of their employés, so far as I have been brought into contact with them, have constantly endeavored to facilitate my work, and have refrained from any attempt to either keep cognizance of it or direct the course of it. At the outset I was readily and formally given unlimited access to all of the books and records. These are so complete in themselves that I have not found it necessary to consult anybody with regard to them.

Concerning possible collusion and fraud, I have to report that I have quietly, but diligently, sought for proof of it outside of the records and wherever there seemed to be the prospect of obtaining it. I have endeavored to crystallize rumors into tangible facts, and have both requested and demanded to be given command of pretended verbal and documentary evidences of corruption in office, in order that it might be exposed. Nothing of the least importance has resulted from such work, in prosecuting which I have gone as

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far as I could go without being armed with judicial powers. The mere statement of this incidental labor being in essence a paraded suspicion touching the official integrity of the Commissioners, it is proper that I should state also that I do not deem any of the rumors, assertions, suspicions, and pretenses of knowledge thus conscientiously investigated, of sufficient importance to formally report to your Excellency.

But the facts and figures of record in relation to the sea-wall, and the obvious inferences to be drawn from them, *are* of such importance, and, are therefore, so elaborately given. In so far as they involve charges against anybody, either of lack of ability or of excess of it, they sustain themselves.

LAUREN E. CRANE.

San Francisco, June 14, 1881.

APPENDIX "B."

Showing Details of Sea-Wall Contracts.

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ENGINEER'S ORIGINAL ESTIMATE

OF

AMOUNT AND VALUATION OF WHOLE WORK AS PER CONTRACT.

Stone, cubic yards, 90,327, @ 60c.	$54,196 00
Earth, cubic yards, 79,000, @ 27 7/10c.	21,900 00
Piles, removed, ——, @ ——	——
Piles, driven, 742, @ $12	8,904 00
Lumber, B. M., ft. 550,000 @ 20	11,000 00
Total	$96,000 00

SYNOPSIS OF CONTRACT

FOR CONSTRUCTING

SECTION NO. 1 OF THE SEA-WALL,

As shown by the Records of the Harbor Commissioners.

CONTRACT AWARDED TO ANDREW ONDERDONK, MAY 13, 1878.

Present: Commissioners Blanding, Burns, and Lee.

Absent: ——

PLANS.

AREAS IN SQUARE FEET.

TO SAND. Earth Embankment.	TO SAND. Rock Embankment.	TO ROCK BOTTOM. Rock Embankment.
Section 0 2,220	Section 0 2,825	Section 0 3,06[illegible]
Section 1 2,193	Section 1 2,761	Section 1 3,07[illegible]
Section 2 2,132	Section 2 2,625	Section 2 3,08[illegible]
Section 3 2,033	Section 3 2,425	Section 3 2,89[illegible]
Section 4 2,135	Section 4 2,472	Section 4 3,29[illegible]
Section 5 1,947	Section 5 2,209	Section 5 3,007
Section 6 1,893	Section 6 2,072	Section 6 3,18[illegible]
Section 7 1,991	Section 7 2,177	Section 7 3,297
Section 8 1,713	Section 8 1,856	Section 8 2,431
Section 9 1,760	Section 9 1,874	Section 9 2,546
Section 10 1,625	Section 10 1,728	Section 10 2,545
21,642	25,024	32,418
1,922	2,276	2,806
19,720	22,748	29,612

Contents of rock embankment to sand 84,252 cubic yds.
Contents of rock embankment to hard bottom 109,674 cubic yds.
Contents of earth embankment to sand 73,037 cubic yds.

ESTIMATED AMOUNT AND VALUATION OF WORK FROM TIME OF COMMENCEMENT.						DETAILS OF PAYMENTS.				
Engineer's Estimates.	Stone Embankment—Cubic Yards.	Earth Embankment—Cubic Yards.	Piles—No. Removed.	Piles—Number Driven.	Lumber—Feet in B. M.	Total Valuation.	25 Per Cent. Reserve.	Previous Payments.	Amount Paid.	Date.
No. 1 for Nov., 1878	600 @ 65c. $390 00	——	——	111 @ $12, $1,332	13,000 @ $20, $260 00	$1,982 00	$495 50	——	$1,486 50	Dec. 3, 1878.
No. 2 for Dec., 1878	930 @ 65c. 604 50	——	——	197 @ 12, 2,364	30,000 @ 20, 600 00	3,568 50	892 12	——	2,676 38	Jan. 3, 1879.
No. 3 for Jan., 1879	25,620 @ 65c. 16,653 00	6,380 @ 30c. $1,914 00	——	342 @ 12, 4,104	20,000 @ 20, 400 00	23,071 00	5,767 75	$4,162 88	13,140 37	Feb. 5, 1879.
No. 4 for Feb., 1879	66,165 @ 60c. 39,699 00	18,610 @ 27 7/10c. 5,154 97	——	342 @ 12, 4,104	55,000 @ 20, 1,100 00	50,057 97	12,514 49	17,303 25	20,240 23	Mar. 3, 1879.
No. 5 for Mar., 1879	80,165 @ 60c. 48,099 00	39,000 @ 27 " 10,803 00	——	342 @ 12, 4,104	108,640 @ 20, 2,172 80	65,178 80	16,294 70	37,543 48	11,340 62	Apl. 3, 1879.
No. 6 for Apl., 1879	83,221 @ 60c. 49,932 60	60,104 @ 27 " 16,648 81	——	465 @ 12, 5,580	108,640 @ 20, 2,172 80	74,334 20	18,583 55	48,884 10	6,866 55	May 2, 1879.
No. 7 for May, 1879	83,349 @ 60c. 50,009 40	78,000 @ 27 " 21,606 00	——	617 @ 12, 7,404	108,640 @ 20, 2,172 80	81,192 20	20,298 05	55,750 65	5,143 50	June 4, 1879.
No. 8 for June, 1879	88,000 @ 60c. 52,800 00	78,000 @ 27 " 21,606 00	——	707 @ 12, 8,484	344,500 @ 20, 6,890 00	89,780 00	22,445 00	60,894 15	6,440 85	July 7, 1879.
No. 9 for July, 1879	90,327 @ 60c. 54,196 00	79,000 @ 27 " 21,900 00	——	742 @ 12, 8,904	550,000 @ 20, 11,000 00	96,000 00	24,000 00	67,335 00	4,665 00	July 24, 1879.
					Reserve of 25 per cent.	——	——	——	24,000 00	Oct. 24, 1879.
					Total	——	——	——	$96,000 00	

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ENGINEER'S ORIGINAL ESTIMATE OF AMOUNT AND VALUATION OF WHOLE WORK AS PER CONTRACT.		
Stone, cubic yards, ____	@ ____	$____
Earth, cubic yards, 146,000,	@ 29 2/10 c.	43,654 00
Piles, removed, ____,	@ ____	
Piles, driven, ____,	@ ____	
Lumber, B. M., ____	@ ____	
Total		$43,654 00

SYNOPSIS OF CONTRACT

FOR WIDENING

SECTION NO. 1 OF THE SEA-WALL,

As shown by the Records of the Harbor Commissioners.

CONTRACT AWARDED TO ANDREW ONDERDONK, AUGUST 27, 1879.

Present: Commissioners Blanding, Burns, Lee, and Mayor A. J. Bryant.

Absent: Gov. Wm. Irwin.

PLANS.

AREAS IN CUBIC YARDS.

TO STIFF MUD.

Earth Embankment.	Rock Embankment.	Rock Embankment.
Section 0 ... *Cub. ft.*	Section 0 ____	Section 0 ____
Section 1 ... 419,650	Section 1 ____	Section 1 ____
Section 2 ... 397,850	Section 2 ____	Section 2 ____
Section 3 ... 381,950	Section 3 ____	Section 3 ____
Section 4 ... 403,650	Section 4 ____	Section 4 ____
Section 5 ... 435,900	Section 5 ____	Section 5 ____
Section 6 ... 430,550	Section 6 ____	Section 6 ____
Section 7 ... 419,650	Section 7 ____	Section 7 ____
Section 8 ... 389,650	Section 8 ____	Section 8 ____
Section 9 ... 384,750	Section 9 ____	Section 9 ____
Section 10 ... 351,500	Section 10 ____	Section 10 ____
Total ... 3,979,100	____	____
Or cub. yds. 147,374	____	____
Ded. con. emb't 2,185	____	____
Tot. cub. yds. 145,189	____	____

Contents of rock embankment to ____ cubic yds.
Contents of earth embankment to hard bottom 167,798 cubic yds.
Contents of earth embankment to stiff mud ... 145,189 cubic yds.

ESTIMATED AMOUNT AND VALUATION OF WORK FROM TIME OF COMMENCEMENT.						DETAILS OF PAYMENTS.				
Engineer's Estimates.	Stone Embankment—Cubic Yards.	Earth Embankment—Cubic Yards.	Piles—No. Removed.	Piles—Number Driven.	Lumber—Feet in B. M.	Total Valuation.	25 Per Cent. Reserve.	Previous Payments.	Amount Paid.	Date.
No. 1 for Sept., 1879		10,313 @ 29 2/10 c. $3,083 59				$3,083 59	$770 90		$2,312 69	Oct. 1, 1879
No. 2 for Oct., 1879		19,508 @ 29 " 5,832 89				5,832 89	1,458 22	$2,312 69	2,061 98	Nov. 4, 1879
No. 3 for Nov., 1879		48,656 @ 29 " 14,548 14				14,548 14	3,637 03	4,374 67	6,536 44	Dec. 2, 1879
No. 4 for Dec., 1879		60,984 @ 29 " 18,234 22				18,234 22	4,558 56	10,911 11	2,764 55	Jan. 6, 1880
No. 5 for Jan., 1880		109,732 @ 29 " 32,809 87				32,809 87	8,202 47	13,675 66	10,931 74	Feb. 5, 1880
No. 6 for Feb., 1880		153,107 @ 29 " 45,779 00				45,779 00	11,444 75	24,607 40	9,726 85	Mar. 2, 1880
No. 7 for Mar., 1880		208,512 @ 29 " 62,345 10				62,345 10	15,586 27	34,334 25	12,424 58	Apl. 5, 1880
No. 8 for Apl., 1880		228,131 @ 29 " 68,211 17				68,211 17	17,052 79	46,758 83	4,399 55	May 4, 1880
No. 9 for May, 1880		232,881 @ 29 " 69,631 42				69,631 42	17,407 85	51,158 38	1,065 19	May 18, 1880
					Reserve of 25 per cent.				17,407 85	May 18, 1880
					Total				$69,631 42	

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ENGINEER'S ORIGINAL ESTIMATE

OF

AMOUNT AND VALUATION OF WHOLE WORK AS PER CONTRACT.

Stone, cubic yards, 120,000 @ 46c.	$55,200 00
Earth, cubic yards, 120,000, @ 20c.	24,000 00
Piles, removed, ----------, @	
Piles, driven, ----------742, @ $12.13	9,000 00
Lumber, B. M., ft. 550,000 @ $20	11,000 00
Total	$99,200 00

SYNOPSIS OF CONTRACT

FOR CONSTRUCTING

SECTION NO. 2 OF THE SEA-WALL,

As shown by the Records of the Harbor Commissioners.

CONTRACT AWARDED TO ANDREW ONDERDONK, NOVEMBER 5, 1878.

Present: Commissioners Blanding, Burns, Lee, Governor Wm. Irwin, and Mayor A. J. Bryant.

Absent: ----------

PLANS.

AREAS IN CUBIC YARDS.

TO ½ DEPTH OF MUD. Earth Embankment.	TO HARD STIFF MUD. Rock Embankment.	TO HARD BOTTOM. Rock Embankment.
Section 0–1 .. 7,183	Section 0–1 .. 10,663	Section 0 ----------
Section 1–2 .. 6,917	Section 1–2 .. 10,713	Section 1 ----------
Section 2–3 .. 6,792	Section 2–3 .. 10,565	Section 2 ----------
Section 3–4 .. 6,946	Section 3–4 .. 11,000	Section 3 ----------
Section 4–5 .. 7,191	Section 4–5 .. 11,063	Section 4 ----------
Section 5–6 .. 7,365	Section 5–6 .. 10,857	Section 5 ----------
Section 6–7 .. 7,309	Section 6–7 .. 11,628	Section 6 ----------
Section 7–8 .. 7,302	Section 7–8 .. 11,378	Section 7 ----------
Section 8–9 .. 7,329	Section 8–9 .. 10,757	Section 8 ----------
Section 9–10 .. 7,287	Section 9–10 .. 10,528	Section 9 ----------
Total ---- 71,621	Total ---- 109,152	Section 10 ----------
Add conect'ng embak'ts --- 42,176	Add to hard bottom ---- 30,333	----------
Total ---- 113,797	Total ---- 139,485	----------

Contents of rock embankment to hard stiff mud .. 109,152 cub. yds.
Contents of rock embankment to hard bottom .. 139,485 cub. yds.
Contents of earth embankment to ½ depth mud .. 113,797 cub. yds.
Contents of earth embankment to hard bottom .. 172,134 cub. yds.

ESTIMATED AMOUNT AND VALUATION OF WORK FROM TIME OF COMMENCEMENT.						DETAILS OF PAYMENTS.				
Engineer's Estimates.	Stone Embankment—Cubic Yards.	Earth Embankment—Cubic Yards.	Piles—No. Removed.	Piles—Number Driven.	Lumber—Feet in B. M.	Total Valuation.	25 Per Cent. Reserve.	Previous Payments.	Amount Paid.	Date.
No. 1 for Feb., 1879	----------	----------	----------	73@12 13/100 $885 49	7,680 @ $20 --- $153 60	$1,039 09	$259 77	----------	$779 32	Apl. 3, 1879
No. 2 for Mar., 1879	2,304@46c. $1,059 84	15 @20c. $3 00	----------	283@12 " 3,432 79	34,440 @ 20 --- 688 80	5,184 43	1,296 11	$779 32	3,109 00	Apl. 3, 1879
No. 3 for Apl., 1879	23,672@46c. 10,889 12	4,196 @20c. 839 20	----------	283@12 " 3,432 79	47,624 @ 20 --- 952 48	16,113 59	4,028 40	3,888 32	8,196 87	May 2, 1879
No. 4 for May, 1879	70,462@46c. 32,412 52	10,332 @20c. 2,066 40	----------	358@12 " 4,342 54	55,082 @ 20 --- 1,101 64	39,923 10	9,980 78	12,085 19	17,857 13	June 4, 1879
No. 5 for June, 1879	115,545@46c. 53,150 70	31,684 @20c. 6,336 80	----------	358@12 " 4,342 54	55,082 @ 20 --- 1,101 64	64,931 68	16,232 92	29,942 32	18,756 44	July 7, 1899
No. 6 for July, 1879	130,521@46c. 60,039 66	44,977 @20c. 8,995 40	----------	358@12 " 4,342 54	65,076 @ 20 --- 1,301 52	74,679 12	18,669 78	48,698 76	7,310 58	Aug. 4, 1879
No. 7 for Aug., 1879	140,422@46c. 64,594 12	77,810 @20c. 15,562 00	----------	579@12 " 7,023 27	95,720 @ 20 --- 1,914 50	89,093 79	22,273 45	56,009 34	10,811 00	Sept. 4, 1879
No. 8 for Sept., 1879	141,908@46c. 65,277 68	117,789 @20c. 23,557 80	----------	742@12 " 9,000 00	550,000 @ 20 --- 11,000 00	108,835 48	27,208 87	66,820 34	14,806 27	Oct. 1, 1879
No. 9 for Oct., 1879	142,739@46c. 65,659 94	138,509 @20c. 27,701 80	----------	742@12 " 9,000 00	550,000 @ 20 --- 11,000 00	113,361 74	28,340 43	81,626 61	3,394 70	Nov. 4, 1879
No. 10 for Nov., 1879	142,739@46c. 65,659 94	148,664 @20c. 29,732 80	----------	742@12 " 9,000 00	550,000 @ 20 --- 11,000 00	115,392 74	28,848 18	85,021 31	1,523 25	Dec. 2, 1879
No. 11 for Dec., 1879	142,739@46c. 65,659 94	156,697 @20c. 31,339 40	----------	742@12 " 9,000 00	550,000 @ 20 --- 11,000 00	116,999 34	29,249 83	86,544 56	1,204 95	Jan. 6, 1880
No. 12 for Jan., 1880	142,739@46c. 65,659 94	157,352 @20c. 31,470 40	----------	742@12 " 9,000 00	550,000 @ 26 --- 11,000 00	117,130 34	29,282 58	87,749 51	98 25	Feb. 5, 1880
					Reserve 25 pr. ct., partial	----------	----------	----------	25,000 00	Jan. 6, 1880
					Reserve 25 pr. ct., balance	----------	----------	----------	4,282 58	Apl. 10, 1880
					Total	----------	----------	----------	$117,130 34	

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ENGINEER'S ORIGINAL ESTIMATE

OF

AMOUNT AND VALUATION OF WHOLE WORK AS PER CONTRACT.

Stone, cubic yards, 150,000 @ 65c.	$97,500 00
Earth, cubic yards, 150,000, @ 25c.	37,500 00
Piles, removed, ----------, @ ----------	
Piles, driven, ----------742, @ $12.13	9,000 00
Lumber, B. M., ft. 550,000 @ $20	11,000 00
Total	$155,000 00

SYNOPSIS OF CONTRACT

FOR CONSTRUCTING

SECTION NO. 3 OF THE SEA-WALL,

As shown by the Records of the Harbor Commissioners.

CONTRACT AWARDED TO ANDREW ONDERDONK, JANUARY 25, 1879.

Present: Commissioners Blanding, Burns, Lee, and Gov. Wm. Irwin.

Absent: The Mayor.

—PLANS.—

—AREAS IN CUBIC YARDS.—

Earth Embankment.	Rock Embankment.	Rock Embankment.
Section 0	Section 0	Section 0
Section 1	Section 1	Section 1
Section 2	Section 2	Section 2
Section 3	Section 3	Section 3
Section 4	Section 4	Section 4
Section 5	Section 5	Section 5
Section 6	Section 6	Section 6
Section 7	Section 7	Section 7
Section 8	Section 8	Section 8
Section 9	Section 9	Section 9
Section 10	Section 10	Section 10

See opposite side.

Contents of rock embankment to stiff mud ------ 99,057 cub. yds.
Contents of rock embankment to hard bottom --155,007 cub. yds.
Contents of earth embankment to ¼ depth mud-117,095 cub. yds.
Contents of earth embankment to stiff mud ----151,031 cub. yds.
Contents of earth embankment to hard bottom -196,840 cub. yds.

ESTIMATED AMOUNT AND VALUATION OF WORK FROM TIME OF COMMENCEMENT.						DETAILS OF PAYMENTS.				
Engineer's Estimates.	Stone Embankment—Cubic Yards.	Earth Embankment—Cubic Yards.	Piles—No. Removed.	Piles—Number Driven.	Lumber—Feet in B. M.	Total Valuation.	25 Per Cent. Reserve.	Previous Payments.	Amount Paid.	Date.
No. 1 for Jan., 1880				150@$12.13 100 $1819 50		$1,819 50	$454 87		$1,364 63	Feb. 5, 1880
No. 2 for Feb., 1880		1,585 @25c. $396 25		150@ 12 " 1,819 50		2,215 75	553 94	$1,364 63	297 18	Mar. 2, 1880
No. 3 for Mar., 1880	20,136½@65c. $13,088 73	1,585 @25c. 396 25		150@ 12 " 1,819 50		15,304 48	3,826 12	1,661 81	9,816 55	Apl. 5, 1880
No. 4 for Apl., 1880	45,526 @65c. 29,591 90	1,950 @25c. 487 50		150@ 12 " 1,819 50		31,898 90	7,974 72	11,478 36	12,445 82	May 4, 1880
No. 5 for May, 1880	88,989½@65c. 57,843 01	23,328 @25c. 5,832 00		300@ 12 " 3,639 00	40,000 @ $20 $800 00	68,114 01	17,028 50	23,924 18	27,161 33	June 3, 1880
No. 6 for June, 1880	125,533½@65c. 81,596 78	60,000 @25c. 15,000 00		300@ 12 " 3,639 00	40,000 @ 20 800 00	101,035 78	25,258 94	51,085 51	24,691 33	July 6, 1880
No. 7 for July, 1880	145,933½@65c. 94,856 78	97,461 @25c. 24,365 25		408@ 12 " 4,949 00	81,420@ 20 1,628 40	125,799 43	31,449 85	75,776 84	18,572 24	Aug. 4, 1880
No. 8 for Aug., 1880	161,370½@65c. 104,890 66	120,953 @25c. 30,238 25		530@ 12 " 6,428 90	98,220 @ 20 1,964 40	143,522 21	35,880 55	94,349 58	13,292 08	Sept. 2, 1880
No. 9 for Sept., 1880	175,891 @65c. 114,329 15	140,039½@25c. 35,009 87		611@ 12 " 7,411 43	134,040 @ 20 2,680 80	159,431 25	39,857 81	107,641 66	11,931 78	Oct. 5, 1880
No. 10 for Oct., 1880	182,711 @65c. 118,762 15	160,301 @25c. 40,075 25		623@ 12 " 7,556 99	272,800 @ 20 5,456 00	171,850 39	42,962 59	119,573 44	9,314 36	Nov. 3, 1880
No. 11 for Nov., 1880	186,960 @65c. 121,524 00	198,704 @25c. 49,676 00		623@ 12 " 7,556 99	532,000 @ 20 10,640 00	189,396 99	47,349 25	128,887 80	13,059 94	Dec. 2, 1880
No. 12 for Dec., 1880	187,912 @65c. 122,142 80	226,563 @25c. 56,640 75		742@ 12 " 9,000 46	546,000 @ 20 10,920 00	198,704 01	49,676 00	141,947 74	7,080 27	Jan. 4, 1881
No. 13 for Jan., 1881	187,912 @65c. 122,142 80	227,796 @25c. 56,949 00		742@ 12 " 9,000 46	550,000 @ 20 11,000 00	199,092 26	49,773 06	149,028 01	291 19	Jan. 13, 1881
No. 14 for Apl., 1881	187,912 @65c. 122,142 80	229,265*@25c. 57,316 25		742@ 12 " 9,000 46	550,000 @ 20 11,000 00	199,459 51	49,864 87	149,319 20	275 44	Apl. 9, 1881
					Reserve of 25 per cent				49,864 87	Apl. 9, 1881
					For change of slope, as	per contract			1,840 00	Jan. 13, 1881
					Total				$201,299 51	

* By reason of subsidence of embankment, 1,469 cubic yards became necessary.

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Section No. 3.

CONSTRUCTION.

Estimated Quantities of Stone Embankment and Earth Embankment—Cubic Feet.

Stone Embankment.			Earth Embankment.			
	To Stiff Mud.	To Hard Bottom.		To ⅓ the depth of Mud.	To Stiff Mud.	To Hard Bottom.
Section 1	272,050	464,450	Section 1	197,500	236,500	333,100
Section 2	257,150	460,850	Section 2	166,050	199,500	273,150
Section 3	250,900	441,900	Section 3	134,300	179,500	246,700
Section 4	274,700	493,000	Section 4	160,550	211,600	293,250
Section 5	294,950	486,500	Section 5	187,850	236,900	323,900
Section 6	286,400	464,850	Section 6	185,850	234,500	298,300
Section 7	275,200	341,900	Section 7	188,300	235,500	269,750
Section 8	264,500	337,950	Section 8	193,600	243,100	295,350
Section 9	259,200	380,200	Section 9	175,800	228,000	328,050
Section 10	239,500	374,700	Section 10	158,400	212,000	303,200
Cubic feet	2,674,550	4,185,200	Cubic feet	1,748,150	2,217,700	2,964,750
Or cubic yards	99,057	155,007	Or cubic yds	64,746	82,137	109,806
Connecting embankment at Francisco Street			cubic yards	16,248	23,944	30,493
Connect'g embk't at Sansome and Chestnut Sts.			cubic yards	36,101	44,950	56,541
Total of earth embankment			cubic yards	117,095	151,031	196,840

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ENGINEER'S ORIGINAL ESTIMATE

OF

AMOUNT AND VALUATION OF WHOLE WORK AS PER CONTRACT.

Stone, cubic yards,	55,956	@ 53c.	$29,656 68
Earth, cubic yards,	100,737,	@ 24c.	24,176 88
Piles, removed,	----------	@	----------
Piles, driven,	457,	@ $14	6,398 00
Lumber, B. M., ft.	350,083	@ $24	8,402 00
Total			$68,633 56

SYNOPSIS OF CONTRACT

FOR CONSTRUCTING

SECTION "A" OF THE SEA-WALL,

As shown by the Records of the Harbor Commissioners.

CONTRACT AWARDED TO J. S. EMERY, DECEMBER 18, 1879.

Present: Commissioners Blanding, McCoppin, Lee, and Gov. Wm. Irwin.

Absent: Mayor I. S. Kalloch.

PLANS.

AREAS IN CUBIC YARDS.

TO ROCK BOTTOM.

Earth Embankment.	Rock Embankment.	Rock Embankment.
Section 0	Section 0	Section 0
Section 1	Section 1	Section 1
Section 2	Section 2	Section 2
Section 3	Section 3	Section 3
Section 4	Section 4	Section 4
Section 5	Section 5	Section 5
Section 6	Section 6	Section 6
Section 7	Section 7	Section 7
Section 8	Section 8	Section 8
Section 9	Section 9	Section 9
Section 10	Section 10	Section 10
See Section "A."	See Section "A."	See Section "A."

Contents of rock embankment to hard mud ..... 40,370 cub. yds.
Contents of rock embankment to hard bottom .. 55,956 cub. yds.
Contents of earth embankment to hard mud .... 76,664 cub. yds.
Contents of earth embankment to hard bottom . 100,737 cub. yds.

ESTIMATED AMOUNT AND VALUATION OF WORK FROM TIME OF COMMENCEMENT.						DETAILS OF PAYMENTS.				
Engineer's Estimates.	Stone Embankment—Cubic Yards.	Earth Embankment—Cubic Yards.	Piles—No. Removed.	Piles—Number Driven.	Lumber—Feet in B. M.	Total Valuation.	25 Per Cent. Reserve.	Previous Payments.	Amount Paid.	Date.
No. 1 for Mar., 1880	5,912 @ 53c. $3,133 36	337 @ 24c. $80 88				$3,214 24	$803 56		$2,410 68	Apl. 10, 1880
No. 2 for Apl., 1880	13,549 @ 58c. 7,180 97	2,377 @ 24c. 570 48				7,751 45	1,937 86	$2,410 68	3,402 91	May 4, 1880
No. 3 for May, 1880	26,665 @ 53c. 14,127 15	5,533 @ 24c. 1,327 92				15,455 07	3,863 77	5,813 59	5,777 71	June 3, 1880
No. 4 for June, 1880	46,096 @ 53c. 24,430 88	7,393 @ 24c. 1,774 32				26,205 20	6,551 30	11,591 30	8,062 60	July 6, 1880
No. 5 for July, 1880	63,387 @ 53c. 33,595 11	25,819 @ 24c. 6,196 56		51 @ $14 $714 00		40,505 67	10,126 41	19,653 90	10,725 36	Aug. 4, 1880
No. 6 for Aug., 1880	63,886 @ 53c. 33,859 58	61,083 @ 24c. 14,659 92		417 @ 14 5,838 00		54,357 50	13,589 37	30,379 26	10,388 87	Sept. 2, 1880
No. 7 for Sept., 1880	69,958 @ 53c. 37,077 74	95,893 @ 24c. 23,014 32		474 @ 14 6,636 00	167,724 @ $24 $4,025 38	70,753 44	17,688 36	40,768 13	12,296 95	Oct. 5, 1880
No. 8 for Oct., 1880	73,793 @ 53c. 39,110 29	122,016⅔ @ 24c. 29,284 00		474 @ 14 6,636 00	340,167 @ 24 8,164 00	83,194 29	20,798 57	53,065 08	9,330 64	Nov. 8, 1880
No. 9 for Jan., 1881	73,793 @ 53c. 39,110 29	123,767⅓ @ 24c. 29,704 24		474 @ 14 6,636 00	340,167 @ 24 8,164 00	83,614 53	20,903 63	62,395 72	315 18	Feb. 4, 1881
					Additional work—special contract				2,000 00	Nov. 8, 1880
					Reserve of 25 per cent				20,903 63	Feb. 4, 1881
					Total				$85,614 53	

Section "A."

CONSTRUCTION.

Estimated Quantities of Rock and Earth Embankments.

ROCK EMBANKMENT.			EARTH EMBANKMENT.	
Station to Station.	To Hard Mud.	To Hard Bottom.	To Hard Mud.	To Hard Bottom.
0 to 0+50	30,275	43,675	112,850	138,850
0+50 to 1	83,600	116,750	227,900	280,200
1 to 2	170,500	226,800	255,800	563,700
2 to 3	178,500	226,800	425,500	552,200
3 to 4	170,700	211,500	389,700	526,200
4 to 4+45	68,805	87,570	165,510	230,130
4+45 to west'n line Powell St.	387,572	597,732	292,632	428,604
Total cubic feet	1,809,952	1,510,827	2,069,892	2,719,884
Or cubic yards	40,370	55,956	76,664	100,737

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ENGINEER'S ORIGINAL ESTIMATE OF AMOUNT AND VALUATION OF WHOLE WORK AS PER CONTRACT.		
Stone, cubic yards, 133,000 @ 69½c.		$92,435 00
Earth, cubic yards, 330,000 @ 34c.		112,200 00
Piles, removed	520 @ $8	4,160 00
Piles, driven	742 @ $12 13/100	9,000 46
Lumber, B. M., ft.	567,000 @ $20	11,340 00
Total		$229,135 46

SYNOPSIS OF CONTRACT

FOR CONSTRUCTING

SECTION NO. 4 OF THE SEA-WALL,

As shown by the Records of the Harbor Commissioners.

CONTRACT AWARDED TO ANDREW ONDERDONK, MAY 27, 1880.

Present: Commissioners Blanding, Evans, Phillips, and Mayor I. S. Kalloch.

Absent: Governor Geo. C. Perkins.

—PLANS.—

—AREAS IN CUBIC YARDS.—

Earth Embankment.	Rock Embankment.	Rock Embankment.
Section 0	Section 0	Section 0
Section 1	Section 1	Section 1
Section 2	Section 2	Section 2
Section 3	Section 3	Section 3
Section 4	Section 4	Section 4
Section 5	Section 5	Section 5
Section 6	Section 6	Section 6
Section 7	Section 7	Section 7
Section 8	Section 8	Section 8
Section 9	Section 9	Section 9
Section 10	Section 10	Section 10
See Section No. 4	See Section No. 4	See Section No. 4

Contents of rock embankment to stiff mud ..... 72,011 cub. yds.
Contents of rock embankment to hard bottom ... 132,993 cub. yds.
Contents of earth embankment to stiff mud .... 195,255 cub. yds.
Contents of earth embankment to hard bottom .. 358,488 cub. yds.

ESTIMATED AMOUNT AND VALUATION OF WORK FROM TIME OF COMMENCEMENT.						DETAILS OF PAYMENTS.				
Engineer's Estimates.	Stone Embankment—Cubic Yards.	Earth Embankment—Cubic Yards.	Piles—No. Removed.	Piles—Number Driven.	Lumber—Feet in B. M.	Total Valuation.	25 Per Cent. Reserve.	Previous Payments.	Amount Paid.	Date.
1880.										1880.
No. 1 for Aug.			222 @ $8 $1,776 00			$1,776 00	$444 00		$1,332 00	Sept. 2.
No. 2 for Sept.			583 @ 8 4,664 00			4,664 00	1,166 00	$1,332 00	2,166 00	Oct. 5.
No. 3 for Oct.			593 @ 8 4,744 00			4,744 00	1,186 00	3,498 00	60 00	Dec. 2.
No. 4 for Nov.	36,753 @ 69½c. $25,543 33	1,710 @ 34c. $581 40	593 @ 8 4,744 00			30,808 73	7,717 18	3,558 00	19,593 55	Dec. 2.
No. 5 for Dec.	67,224 @ 69½c. 46,720 68	2,762 @ 34c. 939 08	593 @ 8 4,744 00			52,403 76	13,100 94	23,151 55	16,151 27	Jan. 4.
1881.										1881.
No. 6 for Jan.	105,814 @ 69½c. 73,540 73	5,241 1/3 @ 34c. 1,782 05	593 @ 8 4,744 00			80,066 78	20,016 29	39,302 82	20,747 27	Feb. 4.
No. 7 for Feb.	131,052 @ 69½c. 91,081 14	27,343 2/3 @ 34c. 9,296 90	593 @ 8 4,744 00			105,122 04	26,280 51	60,050 09	18,791 44	Mar. 5.
No. 8 for Mar.	154,416 @ 69½c. 107,319 12	85,233 1/3 @ 34c. 28,979 50	593 @ 8 4,744 00			141,042 62	35,260 65	78,841 53	26,940 44	April 5.
No. 9 for Apl.	166,521 @ 69½c. 115,732 09	136,857 43/100 @ 34c. 46,531 56	593 @ 8 4,744 00	205 @ $12 13/100 2,486 65	47,966 @ $20 $959 32	170,453 62	42,613 40	105,781 97	22,058 25	May 3.
No. 10 for May	171,461 @ 69½c. 119,165 39	202,962 82/100 @ 34c. 69,007 36	593 @ 8 4,744 00	494 @ 12 " 5,992 22	113,526 @ 20 2,270 52	201,179 49	50,294 87	127,840 22	23,044 40	June —.

Section 4.

CONSTRUCTION.

Estimated Quantities of Stone and Earth in Sea-Wall—Cubic Yards.

FROM—	STONE EMBANKMENT.				EARTH EMBANKMENT.			
	To Stiff Mud.	To Hard Bottom.	Mud under Stone Embankment.	To Hard Bottom, Less 30 pr. ct. of Mud.	To Stiff Mud.	To Hard Bottom.	Mud under Earth Embankment.	To Hard Bottom, Less 30 pr. ct. of Mud.
Station 0 to 1	8,193	12,312	8,533	9,750	21,811	29,314	14,083	25,091
Station 1 to 2	8,270	12,400	9,006	9,698	22,419	33,867	19,372	28,056
Station 2 to 3	7,707	12,382	8,872	9,720	21,233	33,904	20,583	27,728
Station 3 to 4	6,063	13,481	10,889	10,215	17,859	34,371	22,044	27,757
Station 4 to 5	6,081	13,500	12,000	9,900	18,652	39,478	28,894	31,209
Station 5 to 6	6,359	12,181	10,667	8,980	19,107	37,285	25,461	29,646
Station 6 to 7	6,467	13,711	11,444	10,278	18,081	35,785	24,956	28,296
Station 7 to 8	7,319	14,889	11,611	11,406	17,678	36,833	26,889	28,765
Station 8 to 9	7,633	13,589	10,219	10,524	18,463	38,144	26,648	30,150
Station 9 to 10	7,919	14,548	10,304	11,457	19,952	39,467	28,000	31,065
Totals	72,011	132,993	103,545	101,928	195,255	358,488	236,930	287,763

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APPENDIX "C."

Copies of Specifications, Sea-Wall Contracts.

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SPECIFICATIONS FOR SEA-WALL CONTRACTS.

SPECIFICATIONS

For the Construction of Section "A" of the Sea-wall and Thoroughfare along the Water-front line of the City and County of San Francisco.

PLANS AND SECTIONS.

The plans marked "Plans for Section 'A' of the sea-wall and thoroughfare along the water-front line of the City and County of San Francisco, 1879," on file in the office of the Board of State Harbor Commissioners, form a part of these specifications, and all dimensions, materials, slopes, and alignments marked thereon shall be deemed to be incorporated herein, with the exception of lines showing the levels of the mud, sand, clay, or hard bottom.

These lines, and the estimated quantities of material required to fill up to the proper levels above these lines, are shown on sections filed in the office of the Board, but each bidder must form his own estimates of the natural slopes assumed by the earth and stone, of the depths to which they will sink in the materials composing the bottom, and of the quantities of materials required for the completion of the work.

DESCRIPTION OF WORK.

The work will consist of a stone embankment, an earth embankment, and a wharf, extending from a point one thousand (1000) feet to the north and west of the east line of Kearny street—at the terminus of Section 1 of the sea-wall—to the west line of Powell street produced, with the widths, lengths, and alignments shown on the plans, and hereinafter described.

STONE EMBANKMENT.

The surface of this embankment must be three (3) feet below the city base and ten (10) feet in width on the top, the front line being forty-one (41) feet, and the back line fifty-one (51) feet from the outer line of the work.

The back slope, and the portion of the front slope over fifteen feet below the city grade, will be the natural slope assumed by the stone in the dump.

The portion of the front slope, and of the end slope along the west line of Powell street, less than fifteen feet below the city grade, must be two horizontal to one vertical.

The material for this embankment must consist exclusively of rock not subject to decomposition by exposure to air or water.

Each bidder must state in his proposals the quarry or locality from which he may propose to obtain his rock, and must submit with his bid a specimen of the rock which he proposes to use, duly labeled.

If, in the opinion of the Board of State Harbor Commissioners, the rock shall not be suitable, his bid will not be considered.

No stone, which, in the opinion of the Chief Engineer of the Board, shall not be equal in all respects to the specimen submitted by the Contractor, shall be loaded in the cars, carts, scows, or other vehicles, or dumped into the embankment.

The material of the front or sea slope, and also of the whole of the slope along the west line of Powell street, shall be as follows: On the two to one (2 to 1) slope, to a depth of five and a third (5⅓) feet, of stones not less than two (2) cubic feet in volume; and on the natural slope, over fifteen (15) feet below the city grade, to a depth of eight and a half (8½) feet, of stones not less than one (1) cubic foot in volume, the depth, in each case, to be measured at right angles with the surface of the slope.

The stones on the two (2) to one (1) slopes must be carefully laid by hand to the depth of three (3) feet, as may be directed by the Chief Engineer of the Board; and in case that it may be necessary during the progress of the work to dump any stone above or upon the surface of this slope, all such stones shall be removed by the contractor, at his own expense, so that the slope may be formed and built in accordance with these specifications.

Small stones, when mixed with earth, must be loaded by means of forks of such form and dimensions as may be directed by the Chief Engineer.

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The stone will be deposited, when not laid by hand, by dumping from scows, cars, carts, or other vehicles, as the contractor may elect, but the Chief Engineer of the Board shall prescribe the limits within which the dump shall be made, and the mode by which the slopes shall be carried up.

The stone embankment shall be kept one hundred feet, or such other distance as may be directed by the Chief Engineer of the Board, in advance of the earth embankment.

The dredging will be done by the Board of State Harbor Commissioners, and to such depths as may be directed by the Chief Engineer of the Board, but no stone shall be dumped until the dredging deemed necessary by him shall have been completed.

EARTH EMBANKMENT.

The length, width, and alignment of this embankment will be as shown on the plans.

The back slope will be the natural slope assumed by the material.

The end slope, along the west line of Powell street, will be faced with stone of the same size, and with the same slopes, as are prescribed for the front or sea slopes of the stone embankment.

The back slope, for a width of eight (8) feet, measured parallel with the surface, must be of stones not less than one fourth of a cubic foot in volume.

This embankment, to a depth of two feet below the surface, must be of gravel, small stone, or other suitable material, to be approved by the Chief Engineer of the Board as suitable for a firm and stable foundation.

With the exceptions above mentioned, the embankment may be of dry earth, stone, or other suitable material, bnt pure clay or mud will not be accepted.

THE WHARF.

The wharf shall extend along the whole front of the sea-wall, and be six hundred and twenty-five (625) feet in length.

The inner edge of the wharf shall be fifty-one (51) feet back from the front line and the width to outside curb shall be fifty (50) feet.

Piles.

The diameter of the piles at the largest end, clear of bark, shall not be less than the following dimensions: for standard piles, twelve (12) inches; for fender piles, fourteen (14) inches; for mooring piles, fifteen (15) inches.

No mooring or standard pile will be accepted unless entirely covered by the bark, and any pile which may have been injured in driving so as to impair the bearings must be drawn up and removed.

The lengths must be such that they may be driven to a firm and stable foundation, to the satisfaction of the Engineer of the Board.

They must, if possible, be driven through the slopes of the stone embankment to the stable bottom below. The Engineer of the Board may direct the time and manner in which they shall be driven—not to interfere with the dredging or progress of the work.

Standard Piles.

The standard piles must be driven ten (10) feet apart from centre to centre, longitudinally, and nine (9) feet eight (8) inches transversely, and sawed off two (2) feet and four (4) inches below the level of the city base, with the exception of the longitudinal row on the inner side of the wharf, which must be sawed one foot lower, for the reception of a sub-cap. The longitudinal row, ten (10) feet from the inner side of the wharf must be lined to a depth of ten (10) feet below the caps, with twelve by four (12x4) planking, each plank to be spiked to each pile, with two (2) eight (8) inch wrought spikes.

Fender Piles.

Fender piles to be driven along the front of the wharf at intervals of ten (10) feet from center to center. They will be sized to fourteen (14) inches on the outside stringer, and bolted thereto with drift bolts (1) inch in diameter and twenty-two (22) inches long, the head to be countersunk two (2) inches.

Mooring Piles.

Mooring piles to be driven along the front of the wharf at intervals of forty (40) feet, as shown on plans. They will be fastened to the outside stringer, or cap, with screw bolts one (1) inch in diameter. There will be, also, ten (10) mooring piles, as shown in plans, driven ten (10) feet back from the front of the wharf; they will be fastened to a twelve by twelve (12x12) stringer twenty (20) feet long with screw bolts one (1) inch in diameter, the stringer to be fastened to the caps with screw bolts one (1) inch in diameter, and the spaces, between said stringer and the outside stringer, to be blocked on the caps with four by twelve (4x12) blocking fastened to cap with five-eighths (⅝) drift bolts, headed and pointed, eighteen (18) inches long, two (2) to each block. All screw bolts to have suitable nuts and washers.

Caps.

The caps to be each in one piece, twelve (12) inches square, and fastened to the piles with wrought iron bolts, one to each pile, twenty-two (22) inches long and one (1) inch in diameter.

Sub-caps.

A sub-cap, twelve (12) inches square, will be bolted, with one (1) inch bolts, twenty-two (22) inches long, to the longitudinal row of piles in the back of the wharf, each joint to be connected by an iron dog of the dimensions and form shown in the plans.

Stringers.

The outside stringers on the front of the wharf will be of two (2) pieces of ten by twelve (10x12) timber, laid to break joints, and bolted to each cap with drift bolts one (1) inch in diameter and twenty-two (22) inches long; they will be fastened together with screw bolts three quarters (¾) of an inch in diameter, with suitable nuts and washers, and placed not more than ten (10) feet apart.

The stringers on the inner side of the wharf, and twenty-four (24) feet back from the front of the wharf, will be of ten by twelve (10x12) lumber, bolted to the caps with drift bolts one (1) inch in diameter and twenty-two (22) inches long. All other inside stringers to be of four by twelve (4x12) lumber, placed at an average distance apart of two (2) feet, from center to center, of such lengths as to obtain a full bearing of twelve (12) inches on each cap, and bolted to each cap with drift bolts five eighths (⅝) of an inch in diameter, headed and pointed, and eighteen (18) inches long.

Planking.

The entire surface of the wharf to be covered with four (4) inch planks, of the best quality, of lumber and free from knots. They will be spiked to each stringer with eight (8) inch cut spikes, the ends of the planks to have two spikes and to be bored before spiking. The planks to be laid in two (2) sections twenty-four (24) and twenty-six (26) feet in length, as shown on plans.

Chocks.

Chocks of eight by twelve (8x12) timber will be placed between all fender piles; the chocks will let into the piles two (2) inches and fastened to the outside stringers with drift bolts one (1) inch in diameter and twenty (20) inches long; two (2) bolts to each chock.

Curbs.

Curbs of eight by ten (8x10) inches will be placed along the front and ends of the wharf. It will be raised by strips of two by ten (2x10) inch plank, one (1) foot long and ten (10) feet apart; the curb to be bolted with one (1) inch drift bolts, eighteen (18) inches long, passing through each strip.

Lumber and Timber.

All lumber, and timber, and piles must be of the best quality of Puget Sound pine, subject to the approval of the Engineer of the Board, and all rejected material must be immediately removed from the premises.

ACCEPTANCE OF THE WORK.

The work will not be accepted as finally completed until the earth and stone embankments and the wharf shall have been raised to the required grade, and maintained thereat for a period of three months.

In case of settlement or damage to any portion of the embankments or wharf prior to the acceptance of the work as above specified, the work shall be immediately repaired and raised to the proper level at the rate of charges provided for in the contract for similar classes of work; but the contractor shall, during the progress of the work, take such precautions as may be necessary, or may be directed by the Chief Engineer of the Board to protect the work against damage; and in case of failure or neglect to take such precautions, all damages consequent upon such failure or neglect shall be made good by the contractor at his own expense.

CONDITIONS OF CONTRACT.

The contractor will not be required to commence the work in less than thirty (30) days after the award of the contract, and it must be completed on or before the fifteenth day of July, 1880.

The contractor will be required to pay to said Board fifty ($50) dollars per day, as liquidated damages, for each and every day that the completion of the work may be delayed beyond the prescribed time.

The contractor will abide by and comply with the obvious intent and meaning of these specifications, which shall be construed to include all measures, materials, and modes of work necessary for the completion of the works and structures therein specified, in a thorough and workmanlike manner.

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The work will be done under the supervision of the Chief Engineer of the Board, and all questions and disputes with regard to the intent and interpretation of these specifications, and the estimates and measurements of materials and work, shall be referred to him, and his decision thereon shall be final.

Should any questions arise as to the conduct of the work, or the intent or interpretation of the specifications, or should further explanations or details be required, the contractor must apply to the said engineer, allowing him a reasonable time to make the decision or furnish the required information or directions, and shall abide by and comply with the same.

The contract for the whole work will be let to one party, but bidders will state, separately, the total sum for the whole wharf; the price per cubic yard for the completion of the stone embankment, and the total sum, estimating the quantity of material at fifty thousand (50,000) cubic yards; the price per cubic yard and the total sum for the completion of the earth embankment, estimating the quantity of material at ninety thousand (90,000) cubic yards, and the aggregate of the totals thus estimated for the whole work.

This aggregate, thus estimated, will be considered as the basis for the comparison of the bids and awarding the contract, with the understanding that the whole of the earth and stone embankments, whatever may be the number of cubic yards contained, will be completed at the price per cubic yard bid for the estimated quantities.

By the price per cubic yard, stated in the bids, will be understood the price per cubic yard measured in the embankment, to be estimated by the quantities dumped or deposited from the scows, cars, carts, or other vehicles.

The contractor must afford to the Chief Engineer of the Board every facility for determining the quantity of material used, and to this end the cars, carts, or other vehicles, shall be, as far as possible, of uniform dimensions, and filled with uniform loads; and the said Engineer may direct the enforcement of such measures and modes of measurement, as may appear to him advisable, for the proper measurement of the materials.

Every proposal shall be accompanied by a certified check for an amount equal to five per cent. of the amount of such proposal, to be made payable to the order of the Secretary of the Board, and if the proposal shall be accepted and the contract awarded, and if the bidder shall fail or neglect to execute the contract and give the bond required within sixty days after the award shall have been made, in that case, the sum mentioned in said check shall be deemed liquidated damages for such failure or neglect.

Payments will be made by draft on the San Francisco Harbor Improvement Fund in gold and silver coin of the United States, in the following manner: On or before the tenth day of each month the Chief Engineer of the Board shall estimate the amount of work performed during the preceding month, and the sum due therefor according to the contract prices, and the said sum, less twenty-five per cent. thereof, shall be paid within five days after the receipt and approval of the said estimate by the Board of State Harbor Commissioners.

The twenty-five (25) per cent. thus reserved shall be paid to the contractor on the acceptance, as above specified, of the work by the Board of State Harbor Commissioners and their Engineer.

All bids must be made on blanks furnished by the Board of State Harbor Commissioners.

No Chinese or Mongolian labor shall be employed on the work under penalty of forfeiture of the contract, at the option of the Commissioners.

The contractor shall give a bond, with two or more responsible sureties, to be approved by the Board of State Harbor Commissioners, for the faithful performance of the contract.

The Board reserves the right to reject any and all bids.

ISAAC W. SMITH, Chief Engineer.

SPECIFICATIONS

Of Materials and Mode of Construction of a Wharf and Harbor Embankment of earth and stone, for a Sea-wall and Thoroughfare along the Water-front line of the City and County of San Francisco, extending eastwardly and southerly one thousand (1,000) *feet from the east line of Kearny Street.*

PLANS AND SECTIONS.

The plans marked "Plans for a Sea-wall and Thoroughfare along the Water-front line of the City and County of San Francisco, September, 1878," on file in the office of the Board of State Harbor Commissioners, form a part of these specifications, and all dimensions, materials, slopes, and alignments marked thereon, shall be deemed to be incorporated herein, with the exception of lines showing the levels of the mud, sand, clay, or hard bottom.

These lines, and the estimated quantities of materials required to fill up to the proper levels above these lines, are shown on sections filed in the office of the Board, but each bidder must form his own estimates of the natural slopes assumed by the earth and stone, of the depths to which they will sink in the materials composing the bottom, and of the quantities of materials required for the completion of the work.

DESCRIPTION OF WORK.

The work to be performed will consist of a stone embankment, an earth embankment, and a wharf, all lying between the inner and outer water-front lines of the City and County of San Francisco, and extending, with the widths and dimensions hereinafter described, one thousand (1,000) feet eastwardly and southwardly, measured along the outer water-front line, from its intersection with the east line of Kearny street produced.

STONE EMBANKMENT.

The surface of the embankment must be three feet below the city base, ten (10) feet in width, and one thousand (1,000) feet in length, on the top, the front line being forty-one (41) feet, and the back line fifty-one (51) from the outer water front line.

The back slope, and the portion of the front slope over fifteen feet below the city grade, will be the natural slope assumed by the stone in the dump.

The portion of the front slope less than fifteen feet below the city grade, must be two horizontal to one vertical.

The material for this embankment must consist exclusively of rock not subject to decomposition by exposure to air or water.

Each bidder must state in his proposals the quarry or locality from which he may propose to obtain his rock, and must submit, with his bid, a specimen of the rock which he proposes to use, duly labeled.

If, in the opinion of the Board of State Harbor Commissioners, the rock shall not be suitable, his bid will not be considered.

No stone, which, in the opinion of the Chief Engineer of the Board, shall not be equal in all respects to the specimen submitted by the contractor, shall be loaded in the cars, carts, scows, or other vehicles, or dumped into the embankment.

The material of the front or sea slope shall be as follows: On the two to one (2 to 1) slope, to a depth of five and a third (5⅓) feet, of stones not less than two (2) cubic feet in volume, and on the natural slope, over fifteen (15) feet below the city grade, to a depth of eight and a half (8½) feet, of stones not less than one (1) cubic foot in volume, the depth in each case to be measured at right angles with the surface of the slope.

The stones on the two (2) to one (1) slope must be carefully laid by hand to the depth of three (3) feet, as may be directed by the Chief Engineer of the Board; and in case that it may be necessary during the progress of the work to dump any stone above or upon the surface of this slope, all such stones shall be removed by the contractor, at his own expense, so that the slope may be formed and built in accordance with these specifications.

The stones on the southeast end slope of this embankment, for a width of three (3) feet, measured parallel with the surface of the embankment, must be not less than one (1) cubic foot in volume.

With the exceptions above specified, no limit will be required in the size of the stones, but all stones, however small, must be of quality equal to that of the specimen submitted by the contractor with his proposal, and no admixture of earth will be allowed.

The stone will be deposited, when not laid by hand, by dumping from scows, cars, carts, or other vehicles, as the contractor may elect, but the Chief Engineer of the Board shall prescribe the limits within which the dump shall be made, and the mode by which the slopes shall be carried up.

The stone embankment shall be kept one hundred feet, or such other distance as may be directed by the Chief Engineer of the Board, in advance of the earth embankment.

The dredging will be done by the Board of State Harbor Commissioners, and to such depths as may be directed by the Chief Engineer of the Board, but no stone shall be dumped until the dredging deemed necessary by him shall have been completed.

EARTH EMBANKMENT.

The earth embankment will consist of an embankment, back of, and parallel with, the stone embankment, forty (40) feet in width, and one thousand (1000) feet in length, on the top, and a connecting embankment extending to the inner line of the water-front, at its intersection with Bay and Montgomery streets, as shown in the plans.

The length of the connecting embankment on the surface, will be one hundred and nine (109) feet, and the average width two hundred and three (203) feet, as shown on the plans.

The surface of the whole embankment must be at the level of the city grade and the side and end slopes, the natural slopes assumed by the material.

The slope on the southeast end of this embankment and one thousand (1000) feet from Kearny street, must be protected by a facing of stones, not less than one (1) cubic foot in volume, with a width of three (3) feet, measured parallel with the surface of the embankment.

This embankment may be of dry earth, stone, sand, or other suitable material. Pure clay or mud will not be allowed.

The bidders will state in their proposals the source from which they propose to obtain their material and the nature of the soil.

This embankment, to a depth of two feet below the surface, must be of sand, gravel, or other material, to be approved by the Chief Engineer of the Board, as suitable for a firm and stable foundation for a roadway.

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THE WHARF.

The wharf shall extend along the whole front of the sea-wall, and be one thousand (1000) feet in length.

The inner edge of the wharf shall be fifty-one (51) feet back from the water-front line and the width to outside of curb shall be fifty (50) feet.

Piles.

The diameter of the piles at the largest end, clear of bark, shall not be less than the following dimensions: For standard piles, twelve (12) inches; for fender piles, fourteen (14) inches; for mooring piles, fifteen (15) inches.

No mooring or standard pile will be accepted unless entirely covered by the bark, and any pile which may have been injured in driving so as to impair the bearings must be drawn up and removed.

The lengths must be such that they may be driven to a firm and stable foundation, to the satisfaction of the engineer of the Board.

They must, if possible, be driven through the slopes of the stone embankment to the stable bottom below. The engineer of the Board may direct the time and manner in which they shall be driven—not to interfere with the dredging or progress of the work.

Standard Piles.

The standard piles must be driven ten (10) feet apart from center to center, longitudinally, and nine (9) feet eight (8) inches transversely, and sawed off two (2) feet and four (4) inches below the level of the city base, with the exception of the longitudinal row on the inner side of the wharf, which must be sawed one foot lower, for the reception of a sub-cap. The longitudinal row, ten (10) feet from the inner side of the wharf must be lined to a depth of ten (10) feet below the caps, with twelve by four (12x4) planking, each plank to be spiked to each pile, with two (2) eight (8) inch wrought spikes.

Fender Piles.

Fender piles to be driven along the front of the wharf at intervals of ten (10) feet from center to center. They will be sized to fourteen (14) inches on the outside stringer, and bolted thereto with drift bolts one (1) inch in diameter and twenty-two (22) inches long, the head to be countersunk two (2) inches.

Mooring Piles.

Mooring piles to be driven along the front of the wharf at intervals of forty (40) feet, as shown on plans. They will be fastened to the outside stringer, or cap, with screw bolts one (1) inch in diameter. There will be, also, ten (10) mooring piles, as shown in plans, driven ten (10) feet back from the front of the wharf; they will be fastened to a twelve by twelve (12x12) stringer twenty (20) feet long, with screw bolts one (1) inch in diameter, the stringer to be fastened to the caps with screw bolts one (1) inch in diameter, and the spaces between said stringer and the outside stringer to be blocked on the caps with four by twelve (4x12) blocking, fastened to cap with five eighths (⅝) drift bolts, headed and pointed, eighteen (18) inches long, two (2) to each block. All screw bolts to have suitable nuts and washers.

Caps.

The caps to be each in one piece, twelve (12) inches square, and fastened to the piles with wrought iron bolts, one to each pile, twenty-two (22) inches long and one (1) inch in diameter.

Sub-caps.

A sub-cap twelve (12) inches square will be bolted with one (1) inch bolts, twenty-two (22) inches long, to the longitudinal row of piles in the back of the wharf, each joint to be connected by an iron dog of the dimensions and form shown in the plans.

Stringers.

The outside stringers on the front of the wharf will be of two (2) pieces of ten by twelve (10x12) timber, laid to break joints and bolted to each cap with drift bolts one (1) inch in diameter and twenty-two (22) inches long; they will be fastened together with screw bolts three quarters (¾) of an inch in diameter, with suitable nuts and washers, and placed not more than ten (10) feet apart.

The stringers on the inner side of the wharf, and at twenty-four (24) feet back from the front of the wharf, will be of ten by twelve (10x12) lumber, bolted to the caps with drift bolts one inch in diameter and twenty-two (22) inches long. All other inside stringers to be of four by twelve (4x12) lumber, placed at an average distance apart of two (2) feet from center to center, of such lengths as to obtain a full bearing of twelve (12) inches on each cap, and bolted to each cap with drift bolts five-eighths (⅝) of an inch in diameter, headed and pointed, and eighteen (18) inches long.

Planking.

The entire surface of the wharf to be covered with four (4) inch plank of the best quality of lumber and free from knots. It will be spiked to each stringer with eight (8) inch cut spikes, the ends of the planks to have two spikes and to be bored before spiking. The plank to be laid in two (2) sections twenty-four (24) and twenty-six (26) feet in length, as shown on plans.

Chocks.

Chocks of eight by twelve (8x12) timber will be placed between all fender piles; the chocks will be let into the piles two (2) inches and fastened to the outside stringers with drift bolts one (1) inch in diameter and twenty (20) inches long; two (2) bolts to each chock.

Curbs.

A curb of eight by ten (8x10) inches will be placed along the front and ends of the wharf. It will be raised by strips of two by ten (2x10) inch plank, one (1) foot long and ten (10) feet apart; the curb to be bolted with one (1) inch drift bolts, eighteen inches long, passing through each strip.

Lumber and Timber.

All lumber and timber must be of the best quality of Puget Sound Pine, subject to the approval of the Engineer of the Board, and all rejected material must be immediately removed from the premises.

ACCEPTANCE OF THE WORK.

The work will not be accepted, as finally completed, until the earth, and stone embankments, and the wharf, shall have been raised to the required grade and maintained thereat for a period of three months.

In case of settlement or damage to any portion of the embankments or wharf, prior to the acceptance of the work as above specified, the work shall be immediately repaired and raised to the proper level, at the rate of charges provided for in the contract for similar classes of work; but the contractor shall, during the progress of the work, take such precautions as may be necessary, or may be directed by the Chief Engineer of the Board, to protect the work against damage, and in case of failure or neglect to take such precautions, all damages consequent upon such failure or neglect shall be made good by the contractor at his own expense.

CONDITIONS OF CONTRACT.

The contractor will not be required to commence the work in less than thirty (30) days after the award of the contract, and it must be completed on or before the first day of November, 1879.

The contractor will be required to pay to said Board fifty (50) dollars per day, as liquidated damages, for each and every day that the completion of the work may be delayed beyond the prescribed time.

The contractor will abide by and comply with the obvious intent and meaning of the specifications, which shall be construed to include all measures, materials, and modes of work necessary for the completion of the works and structures therein specified, in a thorough and workmanlike manner.

The work will be done under the supervision of the Chief Engineer of the Board, and all questions and disputes with regard to the intent and interpretation of these specifications, and the estimates and measurements of materials and work, shall be referred to him, and his decision thereon shall be final.

Should any questions arise as to the conduct of the work, or the intent or interpretation of the specifications, or should further explanations or details be required, the contractor must apply to the said engineer, allowing him a reasonable time to make the decision or furnish the required information or directions, and shall abide by and comply with the same.

The contract for the whole work will be let to one party, but bidders will state, separately, the total sum for one thousand (1,000) lineal feet of wharf, the price per cubic yard for the completion of the stone embankment, and the total sum, estimating the quantity of material at one hundred and twenty thousand (120,000) cubic yards, the price per cubic yard, and the total sum for the completion of the earth embankment, estimating the quantity of material at one hundred and twenty thousand (120,000) cubic yards, and the aggregate of the totals thus estimated for the whole work.

This aggregate, thus estimated, will be considered as the basis for the comparison of the bids and awarding the contract, with the understanding that the whole of the earth and stone embankments, whatever may be the number of cubic yards contained, will be completed at the price per cubic yard bid for the estimated quantities.

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By the price per cubic yard stated in the bids, will be understood the price per cubic yard measured in the embankment, to be estimated by the quantities dumped or deposited from the scows, cars, carts, or other vehicles.

The contractor must afford to the Chief Engineer of the Board every facility for determining the quantity of material used, and to this end the cars, carts, or other vehicles shall be, as far as possible, of uniform dimensions, and filled with uniform loads; and the said engineer may direct the enforcement of such measures and modes of measurement as may appear to him advisable for the proper measurement of the materials.

Every proposal shall be accompanied by a certified check for an amount equal to five per cent. of the amount of such proposal, to be made payable to the order of the Secretary of the Board, and if the proposal shall be accepted and the contract awarded, and if the bidder shall fail or neglect to execute the contract and give the bond required within six days after the award shall have been made, in that case the sum mentioned in said check shall be deemed liquidated damages for such failure or neglect.

Payments will be made by draft on the San Francisco Harbor Improvement Fund, in gold and silver coin of the United States, in the following manner: On or before the tenth day of each month, the Chief Engineer of the Board shall estimate the amount of work performed during the preceding month, and the sum due therefor according to the contract prices, and the said sum, less twenty-five per cent. thereof, shall be paid within five days after the receipt and approval of the said estimate by the Board of State Harbor Commissioners.

The twenty-five (25) per cent. thus reserved shall be paid to the contractor on the acceptance, as above specified, of the work by the Board of State Harbor Commissioners and their engineer.

All bids must be made on blanks furnished by the Board of State Harbor Commissioners.

No Chinese or Mongolian labor shall be employed on the work, under penalty of forfeiture of the contract, at the option of the Commissioners.

The contractor shall give a bond, with two or more responsible sureties, to be approved by the Board of State Harbor Commissioners, for the faithful performance of the contract.

The Board reserves the right to reject any and all bids.

ISAAC W. SMITH, Chief Engineer.

SPECIFICATIONS

Of Materials and Mode of Construction of a Wharf and Harbor Embankment of earth and stone for a section of the Sea-wall and Thoroughfare along the water-front line of the City and County of San Francisco.

PLANS AND SECTIONS.

The plans marked "Plans for a Sea-wall and Thoroughfare along the water-front line of the City and County of San Francisco, December, 1878," on file in the office of the Board of State Harbor Commissioners, form a part of these specifications, and all dimensions, materials, slopes, and alignments marked thereon, shall be deemed to be incorporated herein, with the exception of lines showing the levels of the mud, sand, clay, or hard bottom.

These lines and the estimated quantities of materials required to fill up to the proper levels above these lines, are shown on sections filed in the office of the Board, but each bidder must form his own estimates of the natural slopes assumed by the earth and stone, of the depths to which they will sink in the materials composing the bottom, and of the quantities of materials required for the completion of the work.

DESCRIPTION OF WORK.

The work to be performed will consist of a stone embankment, an earth embankment, and a wharf, extending, with the widths and dimensions hereinafter described, one thousand (1,000) feet eastwardly and southerly, measured along the water-front line, from a point one thousand (1,000) feet from its intersection with the east line of Kearny street produced, to a point near the north line of Lombard street.

STONE EMBANKMENT.

The surface of the embankment must be three (3) feet below the city base, ten (10) feet in width, and one thousand (1,000) feet in length, on the top, the front line being forty-one (41) feet, and the back line fifty-one (51) from the outer water-front line.

The back slope, and the portion of the front slope over fifteen feet below the city grade, will be the natural slope assumed by the stone in the dump.

The portion of the front slope less than fifteen feet below the city grade, must be two horizontal to one vertical.

The material for this embankment must consist exclusively of rock not subject to decomposition by exposure to air or water.

Each bidder must state in his proposals the quarry or locality from which he may propose to obtain his rock, and must submit, with his bid, a specimen of the rock which he proposes to use, duly labeled.

If, in the opinion of the Board of State Harbor Commissioners, the rock shall not be suitable, his bid will not be considered.

No stone, which, in the opinion of the Chief Engineer of the Board, shall not be equal in all respects to the specimen submitted by the Contractor, shall be loaded in the cars, carts, scows, or other vehicles, or dumped into the embankment.

The material of the front or sea slope shall be as follows: On the two to one (2 to 1) slope, to a depth of five and a third ($5\frac{1}{3}$) feet, of stones not less than (2) cubic feet in volume, and on the natural slope, over fifteen (15) feet below the city grade, to a depth of eight and a half ($8\frac{1}{2}$) feet, of stones not less than one (1) cubic foot in volume, the depth in each case to be measured at right angles with the surface of the slope.

The stones on the two (2) to one (1) slope must be carefully laid by hand to the depth of three (3) feet, as may be directed by the Chief Engineer of the Board; and in case that it may be necessary during the progress of the work to dump any stone above or upon the surface of this slope, all such stones shall be removed by the contractor, at his own expense, so that the slope may be formed and built in accordance with these specifications.

The stones on the southeast end slope of this embankment, for a width of three (3) feet, measured parallel with the surface of the embankment, must be not less than one (1) cubic foot in volume.

With the exceptions above specified, no limit will be required in the size of the stones, but all stones, however small, must be of quality equal to that of the specimen submitted by the Contractor with his proposal, and no admixture of earth will be allowed.

The stone will be deposited, when not laid by hand, by dumping from scows, cars, carts, or other vehicles, as the Contractor may elect, but the Chief Engineer of the Board shall prescribe the limits within which the dump shall be made, and the mode by which the slopes shall be carried up.

The stone embankment shall be kept one hundred feet, or such other distance as may be directed by the Chief Engineer of the Board, in advance of the earth embankment.

The dredging will be done by the Board of State Harbor Commissioners, and to such depths as may be directed by the Chief Engineer of the Board, but no stone shall be dumped until the dredging deemed necessary by him shall have been completed.

The earth embankment will consist of an embankment, back of, and parallel with, the stone embankment, forty (40) feet in width, and one thousand (1000) feet in length, on the top, and two (2) connecting embankments extending to the inner line of the water-front, at its intersection with Sansome and Chestnut streets, and with Francisco street, as shown on plans.

The surface of the whole embankment must be at the level of the city grade and the side and end slopes, the natural slopes assumed by the material.

The diameter of the piles at the largest end, clear of bark, shall not be less than the following dimensions: for standard piles, twelve (12) inches; for fender piles, fourteen (14) inches; for mooring piles, fifteen (15) inches.

No mooring or standard pile will be accepted unless entirely covered by the bark, and any pile which may have been injured in driving so as to impair the bearings must be drawn up and removed.

The lengths must be such that they may be driven to a firm and stable foundation, to the satisfaction of the Engineer of the Board.

They must, if possible, be driven through the slopes of the stone embankment to the stable bottom below. The Engineer of the Board may direct the time and manner in which they shall be driven—not to interfere with the dredging or progress of the work.

Standard Piles.

The standard piles must be driven ten (10) feet apart from center to center, longitudinally, and nine (9) feet eight (8) inches transversely, and sawed off two (2) feet and four (4) inches below the level of the city base, with the exception of the longitudinal row on the inner side of the wharf, which must be sawed one foot lower, for the reception of a sub-cap. The longitudinal row, ten (10) feet from the inner side of the wharf must be lined to a depth of ten (10) feet below the caps, with twelve by four (12x4) planking, each plank to be spiked to each pile, with two (2) eight (8) inch wrought spikes.

Fender Piles.

The slope on the southeast end of this embankment must be protected by a facing of stones, not less than one (1) cubic foot in volume, with a width of three (3) feet, measured parallel with the surface of the embankment.

This embankment may be of dry earth, stone, sand, or other suitable material. Pure clay or mud will not be allowed.

The bidders will state in their proposals the source from which they propose to obtain their material and the nature of the soil.

This embankment, to a depth of two feet below the surface must be of sand, gravel, or other material, to be approved by the Chief Engineer of the Board, as suitable for a firm and stable foundation for a roadway.

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THE WHARF.

The wharf shall extend along the whole front of the sea-wall, and be one thousand (1,000) feet in length.

The inner edge of the wharf shall be fifty-one (51) feet back from the water-front line and the width to outside of curb shall be fifty (50) feet.

Piles.

Fender piles to be driven along the front of the wharf at intervals of ten (10) feet from center to center. They will be sized to fourteen (14) inches on the outside stringer, and bolted thereto with drift bolts one (1) inch in diameter and twenty-two (22) inches long, the head to be countersunk two (2) inches.

Mooring Piles.

Mooring piles to be driven along the front of the wharf at intervals of forty (40) feet, as shown on plans. They will be fastened to the outside stringer, or cap, with screw bolt one (1) inch in diameter. There will be, also, ten (10) mooring piles, as shown in plans, driven ten (10) feet back from the front of the wharf; they will be fastened to a twelve by twelve (12x12) stringer twenty (20) feet long with screw bolts one (1) inch in diameter, the stringer to be fastened to the caps with screw bolts one (1) inch in diameter, and the spaces, between said stringer and the outside stringer, to be blocked on the caps with four by twelve (4x12) blocking fastened to cap with five-eighths ($\frac{5}{8}$) drift bolts, headed and pointed, eighteen (18) inches long, two (2) to each block. All screw bolts to have suitable nuts and washers.

Caps.

The caps to be each in one piece, twelve (12) inches square, and fastened to the piles with wrought iron bolts, one to each pile, twenty-two (22) inches long and one (1) inch in diameter.

Sub-caps.

A sub-cap, twelve (12) inches square, will be bolted, with one (1) inch bolts twenty-two (22) inches long, to the longitudinal row of piles in the back of the wharf, each joint to be connected by an iron dog of the dimensions and form in the plans.

Stringers.

The outside stringers on the front of the wharf will be of two (2) pieces of ten by twelve (10x12) timber, laid to break joints and bolted to each cap with drift bolts one (1) inch in diameter and twenty-two (22) inches long; they will be fastened together with screw bolts three quarters ($\frac{3}{4}$) of an inch in diameter, with suitable nuts and washers, and placed not more than ten (10) feet apart.

The stringers on the inner side of the wharf, and at twenty-four (24) feet back from the front of the wharf, will be of ten by twelve (10x12) lumber, bolted to the caps with drift bolts one (1) inch in diameter and twenty-two (22) inches long. All other inside stringers to be of four by twelve (4x12) lumber, placed at an average distance apart of two (2) feet from center to center, of such lengths as to obtain a full bearing of twelve (12) inches on each cap, and bolted to each cap with drift bolts five eighths ($\frac{5}{8}$) of an inch in diameter, headed and pointed, and eighteen (18) inches long.

Planking.

The entire surface of the wharf to be covered with four (4) inch plank of the best quality of lumber and free from knots. It will be spiked to each stringer with eight (8) inch cut spikes, the ends of the planks to have two spikes and to be bored before spiking. The plank to be laid in two (2) sections twenty-four (24) and twenty-six (26) feet in length, as shown on plans.

Chocks.

Chocks of eight by twelve (8x12) timber will be placed between all fender piles; the chocks will be let into the piles two (2) inches, and fastened to the outside stringers with drift bolts one (1) inch in diameter and twenty (20) inches long; two (2) bolts to each chock.

Curbs.

A curb of eight by ten (8x10) inches will be placed along the front and ends of the wharf. It will be raised by strips of two by ten (2x10) inch plank, one (1) foot long, and ten (10) feet apart; the curb to be bolted with one (1) inch drift bolts, eighteen inches long, passing through each strip.

Lumber and Timber.

All lumber and timber must be of the best quality of Puget Sound pine, subject to the approval of the Engineer of the Board, and all rejected material must be immediately removed from the premises.

ACCEPTANCE OF THE WORK.

The work will not be accepted, as finally completed, until the earth and stone embankments and the wharf shall have been raised to the required grade and maintained thereat for a period of three months.

In case of settlement or damage to any portion of the embankments or wharf, prior to the acceptance of the work as above specified, the work shall be immediately repaired and raised to the proper level at the rate of charges provided for in the contract for similar classes of work; but the contractor shall, during the progress of the work, take such precautions as may be necessary, or may be directed by the Chief Engineer of the Board, to protect the work against damage, and in case of failure or neglect to take such precautions, all damages consequent upon such failure or neglect, shall be made good by the contractor at his own expense.

CONDITIONS OF CONTRACT.

The contractor will not be required to commence the work in less than thirty (30) days after the award of the contract, and it must be completed on or before the first day of January, 1880.

The contractor will be required to pay to said Board fifty (50) dollars per day, as liquidated damages, for each and every day that the completion of the work may be delayed beyond the prescribed time.

The contractor will abide by and comply with the obvious intent and meaning of the specifications, which shall be construed to include all measures, materials and modes of work necessary for the completion of the works and structures therein specified, in a thorough and workmanlike manner.

The work will be done under the supervision of the Chief Engineer of the Board, and all questions and disputes with regard to the intent and interpretation of these specifications, and the estimates and measurements of materials and work, shall be referred to him, and his decision thereon shall be final.

Should any questions arise as to the conduct of the work, or the intent or interpretation of the specifications, or should further explanations or details be required, the contractor must apply to the said engineer, allowing him a reasonable time to make the decision or furnish the required information or directions, and shall abide by and comply with the same.

The contract for the whole work will be let to one party, but bidders will state, separately, the total sum for one thousand (1,000) lineal feet of wharf; the price per cubic yard, for the completion of the stone embankment, and the total sum, estimating the quantity of material at one hundred and fifty thousand (150,000) cubic yards, the price per cubic yard, and the total sum for the completion of the earth embankment, estimating the quantity of material at one hundred and fifty thousand (150,000) cubic yards, and the aggregate of the totals thus estimated for the whole work.

This aggregate, thus estimated, will be considered as the basis for the comparison of the bids and awarding the contract, with the understanding that the whole of the earth and stone embankments, whatever may be the number of cubic yards contained, will be completed at the price per cubic yard bid for the estimated quantities.

By the price per cubic yard, stated in the bids, will be understood the price per cubic yard measured in the embankment, to be estimated by the quantities dumped or deposited from the scows, cars, carts, or other vehicles.

The contractor must afford to the Chief Engineer of the Board every facility for determining the quantity of material used, and to this end the cars, carts, or other vehicles shall be, as far as possible, of uniform dimensions, and filled with uniform loads; and the said engineer may direct the enforcement of such measures and modes of measurement as may appear to him advisable for the proper measurement of the materials.

Every proposal shall be accompanied by a certified check for an amount equal to five per cent. of the amount of such proposal, to be made payable to the order of the Secretary of the Board; and if the proposal shall be accepted and the contract awarded, and if the bidder shall fail or neglect to execute the contract and give the bond required within six days after the award shall have been made, in that case the sum mentioned in said check shall be deemed liquidated damages for such failure or neglect.

Payments will be made by draft on the San Francisco Harbor Improvement Fund, in gold and silver coin of the United States, in the following manner: On or before the tenth day of each month, the Chief Engineer of the Board shall estimate the amount of work performed during the preceding month, and the sum due therefor according to the contract prices, and the said sum, less twenty-five per cent. thereof, shall be paid within five days after the receipt and approval of the said estimate by the Board of State Harbor Commissioners.

The twenty-five (25) per cent. thus reserved shall be paid to the contractor on the acceptance, as above specified, of the work by the Board of State Harbor Commissioners and their engineer.

All bids must be made on blanks furnished by the Board of State Harbor Commissioners.

No Chinese or Mongolian labor shall be employed on the work, under penalty of forfeiture of the contract, at the option of the Commissioners.

The contractor shall give a bond, with two or more responsible sureties, to be approved by the Board of State Harbor Commissioners, for the faithful performance of the contract.

The Board reserves the right to reject any and all bids.

ISAAC W. SMITH, Chief Engineer.

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SPECIFICATIONS

For widening that portion of the Sea-wall and Thoroughfare known as Section One, and extending along the water-front of the City and County of San Francisco, one thousand (1,000) *feet in a westerly direction from the east line of Kearny Street produced.*

PLANS AND SECTIONS.

The plans marked "Plans for widening Section One of the Sea-wall and thoroughfare along the water-front line of the City and County of San Francisco, July 16th, 1879," on file in the office of the Board of State Harbor Commissioners, form a part of these specifications, and all dimensions, materials, slopes, and alignments marked thereon, shall be deemed to be incorporated herein, with the exceptions of lines showing the levels of the mud, sand, clay, or hard bottom.

These lines, and the estimated quantities of materials required to fill up to the proper levels, are shown on sections filed in the office of the Board; but each bidder must form his own estimates of the natural slopes assumed by the materials, of the depths to which they will sink in the materials composing the bottom, and of the quantities of materials required for the completion of the work.

DESCRIPTION OF THE WORK.

The work will consist of an earthen embankment, built to the level of the city base, with a surface width of one hundred and nine (109) feet, and a surface length of one thousand (1,000) feet, extending back of the work now under construction by A. Onderdonk, contractor, one thousand (1,000) feet from the east line of Kearny street, in a westerly direction.

The rear slope of this wall will be the natural slope assumed by the material, and this slope for a width of eight (8) feet, measured parallel with the surface, will be protected with a lining of stone, not less than one fourth of a cubic foot in volume.

The remainder of the embankment will be of earth, sand, or other suitable material; but clay and mud will not be accepted.

The surface of the embankment will be covered to a depth of two feet with gravel, small stone, or other material, to be approved by the Chief Engineer of the Board as suitable for a firm and stable road-bed.

ACCEPTANCE OF THE WORK.

The work will not be accepted, as finally completed, until the embankment shall have been raised to the required grade and maintained thereat for a period of three months.

In case of settlement or damage to any portion of the embankment, prior to the acceptance of the work, as above specified, the work shall be immediately repaired and raised to the proper level at the rate of charges provided for in the contract, for similar classes of work; but the contractor shall, during the progress of the work, take such precautions as may be necessary, or may be directed by the Chief Engineer of the Board, to protect the work against damage, and in case of failure or neglect to take such precautions, all damages consequent upon such failure or neglect, shall be made good by the contractor at his own expense.

CONDITIONS OF CONTRACT.

The contractor will not be required to commence the work in less than thirty (30) days after the award of the contract, and it must be completed on or before the fifteenth day of March, 1880.

The contractor will be required to pay to said Board fifty ($50) dollars per day, as liquidated damages, for each and every day that the completion of the work may be delayed beyond the prescribed time.

The contractor will abide by and comply with the obvious intent and meaning of these specifications, which shall be construed to include all measures, materials, and modes of work necessary for the completion of the works and structures therein specified, in a thorough and workmanlike manner.

The work will be done under the supervision of the Chief Engineer of the Board, and all questions and disputes with regard to the intent and interpretation of these specifications, and the estimates and measurements of materials and work, shall be referred to him, and his decision thereon shall be final.

Should any questions arise as to the conduct of the work, or the intent or interpretation of the specifications, or should further explanations or details be required, the contractor must apply to the said Engineer, allowing him a reasonable time to make the decision or furnish the required information or directions, and shall abide by and comply with the same.

Bidders will state a specific sum per cubic yard for which they will complete the whole of the above described work.

By the price per cubic yard, stated in the bids, will be understood the price per cubic yard measurement in the embankment, to be estimated by the quantities dumped or deposited from the scows, cars, carts, or other vehicles.

The contractor must afford to the Chief Engineer of the Board every facility for determining the quantity of material used, and to this end, the cars, carts, or other vehicles, shall be, as far as possible, of uniform dimensions and filled with uniform loads; and the said engineer may direct the enforcement of such measures and modes of measurement, as may appear to him advisable, for the proper measurement of the materials.

Every proposal shall be accompanied by a certified check for an amount equal to five per cent. of the amount of such proposal, to be made payable to the order of the Secretary of the Board, and if the proposal shall be accepted and the contract awarded, and if the bidder shall fail or neglect to execute the contract and give the bond required within six days after the award shall have been made, in that case, the sum mentioned in said check shall be deemed liquidated damages for such failure or neglect.

Payments will be made by draft on the San Francisco Harbor Improvement Fund, in gold and silver coin of the United States, in the following manner: On or before the tenth day of each month, the Chief Engineer of the Board shall estimate the amount of work performed during the preceding month and the sum due therefor, according to the contract prices, and the said sum, less twenty-five per cent. thereof, shall be paid within five days after the receipt and approval of the said estimate by the Board of State Harbor Commissioners.

The twenty-five (25) per cent. thus reserved shall be paid to the contractor on the acceptance, as above specified, of the work by the Board of State Harbor Commissioners and their engineer.

All bids must be made on blanks furnished by the Board of State Harbor Commissioners.

No Chinese or Mongolian labor shall be employed on the work under penalty of forfeiture of the contract at the option of the Commissioners.

The contractor shall give a bond, with two or more responsible sureties, to be approved by the Board of State Harbor Commissioners, for the faithful performance of the contract.

The Board reserves the right to reject any and all bids.

ISAAC W. SMITH, Chief Engineer.

SPECIFICATIONS

For widening that portion of the Sea-wall and Thoroughfare, known as Section Two, and extending along the water-front of the City and County of San Francisco, one thousand (1,000) *feet in an easterly direction from the east line of Kearny Street produced.*

PLANS AND SECTIONS.

The plans marked "Plans for widening section two of the sea-wall and thoroughfare along the water-front line of the City and County of San Francisco, July 16th, 1879," on file in the office of the Board of State Harbor Commissioners, form a part of these specifications, and all dimensions, materials, slopes, and alignments, marked thereon, shall be deemed to be incorporated herein, with the exception of lines showing the levels of the mud, sand, clay, or hard bottom.

These lines, and the estimated quantities of materials required to fill up to the proper levels above these lines, are shown on sections filed in the office of the Board, but each bidder must form his own estimates of the natural slopes assumed by the earth and stone, of the depths to which they will sink in the materials composing the bottom, and of the quantities of materials required for the completion of the work.

DESCRIPTION OF WORK.

The work will consist of an earth embankment one thousand (1,000) feet in length and one hundred and nine (109) feet in width, with the exception of such portions thereof, on the extension of Kearny, Bay, and Montgomery streets, as have been included in the contracts of A. Onderdonk.

The surface of the work to be executed as shown within brown lines on the plans.

The work will be built up to the level of the city base, and, for a depth of two feet below the surface, will be of gravel, small stone, or other material, to be approved by the Chief Engineer of the Board, as suitable for a firm and stable roadbed.

The back slope and the slope on the southeast end of the embankment must be protected by a lining of stone eight feet in width measured parallel with the surface.

With these exceptions, the materials may be of sand, earth, or stone, but pure clay or mud will not be accepted.

CONDITIONS OF CONTRACT.

The contractor will not be required to commence the work before the completion of the contract of A. Onderdonk on section two of the sea-wall, and it must be completed within six months from the time of commencement.

The contractor will be required to pay to said Board fifty ($50) dollars per day, as liquidated

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damages, for each and every day that the completion of the work may be delayed beyond the prescribed time.

The contractor will abide by and comply with the obvious intent and meaning of these specifications, which shall be construed to include all measures, materials, and modes of work necessary for the completion of the works and structures therein specified, in a thorough and workmanlike manner.

The work will be done under the supervision of the Chief Engineer of the Board, and all questions and disputes with regard to the intent and interpretation of these specifications, and the estimates and measurements of materials and work, shall be referred to him, and his decision thereon shall be final.

Should any questions arise as to the conduct of the work, or the intent or interpretation of the specifications, or should further explanations or details be required, the contractor must apply to the said engineer, allowing him a reasonable time to make the decision or furnish the required information or directions, and shall abide by and comply with the same.

Bidders will state a specific sum per cubic yard for which they will complete the whole of the above described work.

By the price per cubic yard, stated in the bids, will be understood the price per cubic yard measured in the embankment, to be estimated by the quantities dumped or deposited from the scows, cars, carts, or other vehicles.

The contractor must afford to the Chief Engineer of the Board every facility for determining the quantity of material used, and to this end the cars, carts, or other vehicles shall be, as far as possible, of uniform dimensions, and filled with uniform loads; and the said engineer may direct the enforcement of such measures and modes of measurement as may appear to him advisable for the proper measurement of the materials.

Every proposal shall be accompanied by a certified check for an amount equal to five per cent. of the amount of such proposal, to be made payable to the order of the Secretary of the Board; and if the proposal shall be accepted and the contract awarded, and if the bidder shall fail or neglect to execute the contract and give the bond required within six days after the award shall have been made, in that case the sum mentioned in said check shall be deemed liquidated damages for such failure or neglect.

Payments will be made by draft on the San Francisco Harbor Improvement Fund, in gold and silver coin of the United States, in the following manner: On or before the tenth day of each month, the Chief Engineer of the Board shall estimate the amount of work performed during the preceding month, and the sum due therefor according to contract prices, and the said sum, less twenty-five per cent. thereof, shall be paid within five days after the receipt and approval of the said estimate by the Board of State Harbor Commissioners.

The twenty-five (25) per cent. thus reserved shall be paid to the contractor on the acceptance, as above specified, of the work by the Board of State Harbor Commissioners and their engineer.

All bids must be made on blanks furnished by the Board of State Harbor Commissioners.

No Chinese or Mongolian labor shall be employed on the work, under penalty of forfeiture of the contract, at the option of the Commissioners.

The contractor shall give a bond, with two or more responsible sureties, to be approved by the Board of State Harbor Commissioners, for the faithful performance of the contract.

The Board reserves the right to reject any and all bids.

ISAAC W. SMITH, Chief Engineer.

SPECIFICATIONS

Of Materials and Mode of Construction of a Wharf and Harbor Embankment of earth and stone, to be designated as Section Four (4) of the sea-wall and thoroughfare along the water-front line of the City and County of San Francisco.

PLANS AND SECTIONS.

The plans marked "Plans and Sections of section four of the sea-wall and thoroughfare, February 16, 1880," on file in the office of the Board of State Harbor Commissioners, form a part of these specifications, and all dimensions, materials, slopes, and alignments, marked thereon, shall be deemed to be incorporated herein, with the exception of lines showing the levels of the mud, sand, clay, or hard bottom.

These lines, and the estimated quantities of material required to fill up to the proper levels above these lines, are shown on sections filed in the office of the Board, but each bidder must form his own estimates of the natural slopes assumed by the earth and stone, of the depths to which they will sink in the materials composing the bottom, and of the quantities of materials required for the completion of the work.

DESCRIPTION OF WORK.

The work to be performed will consist of a stone embankment, an earth embankment, and a wharf, extending, with the widths and dimensions hereinafter described, one thousand (1,000) feet southerly, measured along the water-front line, from a point two thousand (2,000) feet

south and east of its intersection with the east line of Kearny street produced, to a point near the south line of Filbert street produced.

STONE EMBANKMENT.

The surface of this embankment must be three feet below the city base, ten (10) feet in width, and one thousand (1,000) feet in length, on the top, the front line being forty-one (41) feet, and the back line fifty-one (51) from the outer water-front line.

The back slope, and the portion of the front slope over fifteen feet below the city grade, will be the natural slope assumed by the stone in the dump.

The portion of the front slope less than fifteen feet below the city grade, must be two horizontal to one vertical, but the Engineer of the Board may, at his discretion, change the slope; provided, that the quantity of large stone be not thereby increased.

The material for this embankment must consist exclusively of rock not subject to decomposition by exposure to air or water.

Each bidder must state in his proposals the quarry or locality from which he may propose to obtain his rock, and must submit, with his bid, a specimen of the rock which he proposes to use, duly labeled.

If, in the opinion of the Board of State Harbor Commissioners, the rock shall not be suitable, his bid will not be considered.

No stone, which, in the opinion of the Chief Engineer of the Board, shall not be equal in all respects to the specimen submitted by the Contractor, shall be loaded in the cars, carts, scows, or other vehicle, or dumped into the embankment.

The material of the front or sea slope shall be as follows: On the two to one (2 to 1) slope, to a depth of five and a third (5⅓) feet, of stones not less than two (2) cubic feet in volume, and on the natural slope, over fifteen (15) feet below the city grade, to a depth of eight and a half (8½) feet, of stones not less than one (1) cubic foot in volume, the depth in each case to be measured at right angles with the surface of the slope.

The stones on the two (2) to one (1) slope must be carefully laid by hand to the depth of three (3) feet, as may be directed by the Chief Engineer of the Board; and in case that it may be necessary during the progress of the work to dump any stones above or upon the surface of this slope, all such stones shall be removed by the Contractor, at his own expense, so that the slope may be formed and built in accordance with these specifications.

The stones on the south end of this embankment, for a width of three (3) feet, measured parallel with the surface of the embankment, must not be less than one (1) cubic foot in volume.

With the exceptions above specified, no limit will be required in the size of the stones, but all stones, however small, must be of quality equal to that of the specimen submitted by the contractor with his proposal, and no admixture of earth will be allowed.

The stone will be deposited, when not laid by hand, by dumping from scows, cars, carts, or other vehicles, as the contractor may elect, but the Chief Engineer of the Board shall prescribe the limits within which the dump shall be made, and the mode by which the slopes shall be carried up.

The stone embankment shall be kept one hundred feet, or such other distance as may be directed by the Chief Engineer of the Board, in advance of the earth embankment.

The dredging will be done by the Board of State Harbor Commissioners, and to such depths as may be directed by the Chief Engineer of the Board, but no stone shall be dumped until the dredging deemed necessary by him shall have been completed.

EARTH EMBANKMENT.

The earth embankment will consist of an embankment back of and parallel with the stone embankment, one hundred and forty-nine (149) feet in width, and one thousand (1,000) feet in length on the top, and also of such proportion of the foundation under the stone embankment as may be directed by the Engineer of the Board to be filled in with earth.

The surface of the whole embankment must be at the level of the city grade, and the side and end slopes, the natural slopes assumed by the material.

The slope on the south end of this embankment, three thousand (3,000) feet from Kearny street, must be protected by a facing of stones not less than one (1) cubic foot in volume, with a width of three (3) feet, measured parallel with the surface of the embankment.

This embankment may be of dry earth, stone, sand, or other suitable material. Pure clay or mud will not be allowed.

The bidders will state in their proposals the source from which they propose to obtain their material, and the nature of the soil.

This embankment, to a depth of two feet below the surface, must be of gravel, broken stone, or other material, to be approved by the Chief Engineer of the Board as suitable for a firm and stable foundation for a roadway.

THE WHARF.

The wharf shall extend along the whole front of the sea-wall, and be one thousand (1,000) feet in length, and will include the removal of the old Front street wharf, between Filbert and Greenwich streets.

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The inner edge of the wharf shall be fifty-one (51) feet back from the water-front line and the width to outside of curb shall be fifty (50) feet.

Piles.

The diameter of the piles at the largest end, clear of bark, shall not be less than the following dimensions: For standard piles, twelve (12) inches; for fender piles, fourteen (14) inches; for mooring piles, fifteen (15) inches.

No mooring or standard pile will be accepted unless entirely covered by the bark, and any pile which may have been injured in driving so as to impair the bearings must be drawn up and removed.

The lengths must be such that they may be driven to a firm and stable foundation, to the satisfaction of the engineer of the Board.

They must, if possible, be driven through the slopes of the stone embankment to the stable bottom below. The Engineer of the Board may direct the time and manner in which they shall be driven—not to interfere with the dredging or progress of the work.

Standard Piles.

The standard piles must be driven ten (10) feet apart from center to center, longitudinally, and nine (9) feet eight (8) inches transversely, and sawed off two (2) feet and four (4) inches below the level of the city base, with the exception of the longitudinal row on the inner side of the wharf, which must be sawed one foot lower, for the reception of a sub-cap. The longitudinal row, ten (10) feet from the inner side of the wharf, must be lined to a depth of ten (10) feet below the caps, with twelve by four (12x4) planking, each plank to be spiked to each pile, with two (2) eight (8) inch wrought spikes.

Fender Piles.

Fender piles to be driven along the front of the wharf at intervals of ten (10) feet from center to center. They will be sized to fourteen (14) inches on the outside stringer, and bolted thereto with drift bolts one (1) inch in diameter and twenty-two (22) inches long, the head to be countersunk two (2) inches.

Mooring Piles.

Mooring piles to be driven along the front of the wharf at intervals of forty (40) feet, as shown on plans. They will be fastened to the outside stringer, or cap, with screw bolts one (1) inch in diameter. There will be, also, ten (10) mooring piles, as shown in plans, driven ten (10) feet back from the front of the wharf; they will be fastened to a twelve by twelve (12x12) stringer twenty (20) feet long with screw bolts one (1) inch in diameter, the stringer to be fastened to the caps with screw bolts one (1) inch in diameter, and the spaces, between said stringer and the outside stringer, to be blocked on the caps with four by twelve (4x12) blocking, and fastened to the caps with five eighths (⅝) drift bolts, headed and pointed, eighteen (18) inches long, two (2) to each block. All screw bolts to have suitable nuts and washers.

Caps.

The caps to be in one piece, twelve (12) inches square, and fastened to the piles with wrought iron bolts, one to each pile, twenty-two (22) inches long and one (1) inch in diameter.

Sub-caps.

A sub-cap of redwood twelve (12) inches square will be bolted, with one (1) inch bolts twenty-two (22) inches long, to the longitudinal row of piles in the back of the wharf, each joint to be connected by an iron dog of the dimensions and form shown in the plans.

Stringers.

The outside stringers on the front of the wharf will be of two (2) pieces of ten by twelve (10x12) timber, laid to break joints and bolted to each cap with drift bolts one (1) inch in diameter and twenty-two (22) inches long; they will be fastened together with screw bolts three-quarters (¾) of an inch in diameter, with suitable nuts and washers, and placed not more than ten (10) feet apart.

The stringers on the inner side of the wharf, and at twenty-four (24) feet back from the front of the wharf, will be of ten by twelve (10x12) lumber, bolted to the caps with drift bolts one (1) inch in diameter and twenty-two (22) inches long. All other inside stringers to be of four by twelve (4x12) lumber, placed at an average distance apart of two (2) feet from center to center, of such lengths as to obtain a full bearing of twelve (12) inches on each cap, and bolted to each cap with drift bolts five-eighths (⅝) of an inch in diameter, headed and pointed, and eighteen (18) inches long.

Planking.

The entire surface of the wharf to be covered with four (4) inch planks of the best quality of lumber and free from knots. It will be spiked to each stringer with eight (8) inch cut spikes, the ends of the planks to have two spikes and to be bored before spiking. The plank to be laid in two (2) sections twenty-four (24) and twenty-six (26) feet in length, as shown on plans.

Chocks.

Chocks of eight by twelve (8x12) timber will be placed between all fender piles; the chocks will be let into the piles two (2) inches and fastened to the outside stringers with drift bolts one (1) inch in diameter and twenty (20) inches long; two (2) bolts to each chock.

Curbs.

A curb of eight by ten (8x10) inches will be placed along the front and ends of the wharf. It will be raised by strips of two by ten (2x10) inch plank, one (1) foot long and ten (10) feet apart; the curb to be bolted with one (1) inch drift bolts, eighteen (18) inches long, passing through each strip.

Lumber and Timber.

All lumber and timber must be of the best quality of Puget Sound pine, subject to the approval of the Engineer of the Board, and all rejected material must be immediately removed from the premises.

REMOVAL OF OLD FRONT STREET WHARF.

All of the piles of this wharf outside of the water-front line, and within seventy (70) feet on the inside, must be pulled up and the superstructure removed, so that the mud may be dredged to a depth of forty (40) feet below low water, prior to the commencement of the stone embankment and new wharf.

ACCEPTANCE OF THE WORK.

The work will not be accepted, as finally completed, until the earth and stone embankments and the wharf shall have been raised to the required grade and maintained thereat for a period of three months.

In case of settlement or damage to any portion of the embankments or wharf, prior to the acceptance of the work, as above specified, the work shall be immediately repaired and raised to the proper level at the rate of charges provided for in the contract for similar classes of work; but the contractor shall, during the progress of the work, take such precautions as may be necessary, or may be directed by the Chief Engineer of the Board, to protect the work against damage, and in case of failure or neglect to take such precautions, all damages consequent upon such failure or neglect shall be made good by the contractor at his own expense.

CONDITIONS OF CONTRACT.

The contractor will not be required to commence the work in less than thirty (30) days after the award of the contract, and it must be completed on or before the first day of April, 1881.

The contractor will be required to pay to said Board fifty ($50) dollars per day, as liquidated damages, for each and every day that the completion of the work may be delayed beyond the prescribed time.

The contractor will abide by and comply with the obvious intent and meaning of the specifications, which shall be construed to include all measures, materials, and modes of work necessary for the completion of the works and structures therein specified in a thorough and workmanlike manner.

The work will be done under the supervision of the Chief Engineer of the Board, and all questions and disputes with regard to the intent and interpretation of these specifications, and the estimates and measurements of materials and work, shall be referred to him, and his decision thereon shall be final.

Should any questions arise as to the conduct of the work, or the intent and interpretation of the specifications, or should further explanations or details be required, the contractor must apply to the said engineer, allowing him reasonable time to make the decision or furnish the required information or directions, and shall abide by and comply with the same.

Each bidder will state separately in his proposal:

First—The total sum for the wharf, including the removal of the old structure on Front Street, estimating the number of piles to be pulled up at five hundred and twenty (520).

Second—The price per cubic yard for the completion of the stone embankment, and the total sum at such price, estimating the quantity of stone at one hundred and thirty-three thousand (133,000) cubic yards.

Third—The price per cubic yard for the completion of the earth embankment, and the total sum, estimating the quantity of earth at three hundred and thirty thousand (330,000) cubic yards.

Fourth—The aggregate of the totals, thus estimated for the whole work.

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This aggregate, thus estimated, will be considered as the basis for the comparison of the bids, with the understanding that the whole of the earth and stone embankments, whatever may be the number of cubic yards contained, will be completed at the price per cubic yard bid for the estimated quantities, and that an allowance shall be made at the rate of eight ($8) dollars per pile for any difference between the actual and estimated number of piles to be pulled up.

By the price per cubic yard, stated in the bids, will be understood the price per cubic yard measured in the embankment, to be estimated by the quantities dumped or deposited from the scows, cars, carts, or other vehicles.

The contractor must afford to the Chief Engineer of the Board every facility for determining the quantity of material used, and to this end the cars, carts, or other vehicles, shall be, as far as possible, of uniform dimensions, and filled with uniform loads; and the said Engineer may direct the enforcement of such measures and modes of measurement, as may appear to him advisable, for the proper measurement of the materials.

Each bidder must inclose with his proposals a certified check for an amount equal to five per cent. of the proposal, to be made payable to the order of the Secretary of the Board, and if the proposal shall be accepted and the contract awarded, and if the bidder shall fail or neglect to execute the contract and give the bond required within six days after the award shall have been made, in that case the sum mentioned in said check shall be deemed liquidated damages for such failure or neglect.

Payments will be made by draft on the San Francisco Harbor Improvement Fund in gold and silver coin of the United States, on the completion of the work and its acceptance by the Board and their Engineer.

All bids must be made on blanks furnished by the Board of State Harbor Commissioners.

No Chinese or Mongolian labor shall be employed on the work under penalty of forfeiture of the contract, at the option of the Commissioners.

The contractor shall give a bond, with two or more responsible sureties to be approved by the Board of State Harbor Commissioners, for the faithful performance of the contract.

The Board reserves the right to reject any and all bids.

ISAAC W. SMITH, Chief Engineer.

UNIVERSITY OF CALIFORNIA.

REPORT

OF THE

PRESIDENT FOR THE BOARD OF REGENTS.

1881-82.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

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REPORT.

To the Honorable Board of Regents of the University of California:

I have the honor of herewith submitting to you my first annual report as President of the University for the academic year, August 1, 1881, to August 1, 1882.

A sufficiently minute abstract of your proceedings for the year, including resignations and appointments in the several Faculties of the University, has been prepared by your Secretary and already submitted to you. Such details are not here repeated.

The courses of study in the several departments of the University, the number of professors and students, and other details regarding the internal administration of the University, will be found in the University Register for 1881–82, which is herewith submitted as a part of this report.

The reports of the Faculties of the Colleges of Law, Medicine, Pharmacy, and Dentistry follow this report, and merit your attention.

I desire, however, in addition to these general statements, to call your attention to certain important regulations adopted by the several Faculties during the year, and to the more pressing needs of the University.

Admission Examinations.

Of the new regulations, perhaps the most important are those affecting the requirements for admission to the undergraduate department of the University. Written examinations have been substituted for oral; the time that may be given to an examination has been more narrowly limited; the scope of the examinations for admission to the Colleges of Science, and to the Literary Course, has been enlarged; examinations have been established at Los Angeles and Marysville, and the system of preliminary examinations has been introduced by which applicants have the privilege of taking a portion of the examination in June or August of one year, and the remainder in June or August of the year following.

These changes are of such importance as to deserve more than simple mention. The oral method of examination has its advantages, but experience seems to have demonstrated that a better average judgment of an applicant's qualifications may be reached through written than through oral tests. It is certainly true that in no other way can a uniform test be applied to a large body of applicants, and a uniform judgment reached. It is believed also that these written examinations will serve as a valuable means of communication between the University and preparatory schools. It is the purpose of the Faculty to issue and distribute to teachers throughout the

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State a yearly bulletin, containing, in addition to the usual information regarding the requirements for admission, the questions used at the examinations next preceding its issue. In no other way certainly can such an exact idea be given of the nature and scope of the examination, and consequently the kind and degree of preparation expected.

It is hardly more important that a student should know what he has studied than that he should be able to make his knowledge readily available, that he should have the power of concentration and rapid execution. The limited time allowed to each examination, from an hour to an hour and a half, is therefore of material aid in forming a judgment of the applicant's preparation for college work, and of his mental habits and capacity. It is likely also to secure greater care in the preparatory schools; for to enable applicants to pass creditable admission examinations, it will be necessary for teachers to accustom their pupils to frequent written examinations, limited in time, that shall tax their attention and call forth their energies.

Enlargement of Scope of Examination.

The enlargement of the scope of the examinations for admission to the literary course and the courses in science is a matter of importance. It has long been thought desirable that the requirements for admission to these courses should call for as long and as careful preparation as has been necessary to gain admission to the classical course. It has also seemed desirable that the examinations should cover a wider range of subjects; such a range as shall embrace what every business man would be glad to know, and what the business man of the future will feel that he must know. Both of these objects have been reasonably accomplished by the addition of the elements of two of the natural sciences to the requirements for admission to the literary course and the courses in science, and by the further addition of English history and a more critical and extended knowledge of English, to the requirements for admission to the courses in science. To enable applicants to meet these additional requirements within the time usually given to preparation for college, it was found necessary to modify somewhat the previous requirements in mathematics.

It is believed that our present requirements for admission, especially to the colleges of science, will be found to include very fairly the subjects thought necessary to a reasonably good secondary education; in other words, that a young man or a young woman seeking only for such an education as every thoughtful member of society should have, could hardly do better than to take the course of study necessary to gain admission to the University. In pursuance of a notice given some two years ago, the Latin requirements became this year identical for the classical and the literary courses. The requirements for admission to the classical department have not been materially changed.

Standard of Admission.

It is a common impression that our standard for admission is much inferior to that of most Eastern colleges. The impression is quite erroneous. A careful comparison of our requirements and entrance examinations with those of Yale, certainly one of the best colleges in the country, and with those of other Eastern colleges, usually ranked among the best, will show that, as regards the classical department,

our standard is in no way inferior to theirs, and that it is quite in advance of some of them, while our requirements for admission to the colleges of science, though differing somewhat in detail from those of the Sheffield Scientific School of Yale College, are fairly equivalent to them, and higher than those of the Institute of Technology in Boston. Indeed, the policy of the Faculty in so rapidly raising the standard to that of old Eastern institutions of the first class, has sometimes been questioned, especially by those who measure the success of an institution of learning by the number of students in attendance, rather than by the standard of scholarship maintained; for it was feared that the advanced requirements would be an effectual discouragement to many young men and young women who would otherwise attend. The Faculty do not share in this feeling. It is, on the contrary, believed that whatever may be the temporary effect, the ultimate effect must be an increase in the number and quality of students. Indeed, the loss in numbers that finally results from a high standard is not to be regretted, for it is not desirable that there should be aggregated at the University a large body of students unfit for college work, and unwilling to meet the requirements of a high standard of scholarship. A scholarly atmosphere is not created by numbers, but by a learned Faculty and a body of students, small though it may be, of good ability, good attainments, and enthusiastic in their studies. It is not a function of the University to provide for those who have not the capacity or the inclination to do good and faithful work. To such students the University can be of little advantage, and their presence is a constant menace to a proper University spirit. But to students so mature as to place their earnestness beyond question, the University offers every encouragement to the pursuit of special lines of study by freely throwing open all departments of the University to them. Such students have only to satisfy the professors, whose courses of study they wish to pursue, that they are prepared to do the proposed work.

Age of Students admitted.

The average age of the students admitted in June and August of the present year, 1882, was eighteen years one month; that of the young men being eighteen years six months, indicating that with the facilities for preparation now offered in the State, our present requirements for admission will secure students of sufficient maturity to reap the full benefit of a college course. The hearty and creditable manner in which the teachers in the principal schools throughout the State have responded to the new requirements is deserving of special mention.

Examinations at Los Angeles and Marysville.

The establishment of admission examinations at Los Angeles and Marysville is likely to prove a matter of much importance to the University and to the educational interests of the State. The uncertainty that young women and young men living in the northern or southern portions of the State feel regarding their ability to pass the examinations necessary for admission to the University, and the very considerable expense that must be incurred in coming to Berkeley, are enough to deter many of them from ever entering upon a preparatory course. Now that the examination is brought within their reach, it is expected that a steadily increasing number from the more

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remote counties will avail themselves of the advantages offered at the University. The result of the experiment cannot, however, be determined, until it has been tried for three or four years; that is, until the class that had just entered the preparatory schools when the plan was adopted, is ready to graduate and take our examinations. The number of applicants at the first examination, held last June, was small, but rather larger than had been expected. Five applied at Los Angeles and six at Marysville.

The following table shows in detail the result of the admission examinations of the present year, exclusive of the partial and special course students. I have not at hand the data for making comparisons with previous years. The per cent indicated by the figures opposite the first three items is based upon the total number of applicants; the figures opposite the remaining items indicate the percentage conditioned in the various subjects, the per cent being based upon the number of applicants who took the subject named:

Admitted clear	43.85	Greek, Roman History and Geography	10.5
Conditioned	38.35	Physics	26
Rejected	17.80	Chemistry (no report)	
English—subject 1	12.3	Botany	11
Arithmetic	20.5	Physiology	21.4
Algebra	20.5	Free-hand drawing	50
Geometry	28.7	Mineralogy (no applicants)	
United States History and Geography	12.3	History of England	22.8
Cæsar, Latin at sight, and composition	13.15	English—subject 14 (a)	28.5
Cicero and Virgil	13.15	English—subject 14 (b) (Subject not required this year)	
Anabasis or Reader, and Greek at sight	6.25		
Homer and Greek prose	12.5		

Regulations regarding Discipline and Scholarship.

There has been, during the year, an essential modification of the regulations regarding discipline and scholarship, by the adoption of the following general regulation:

1. It is presumed that students are in attendance at the University with an earnest purpose, and that they know the difference between good and bad conduct, between faithful and unfaithful work.

2. It is also believed that good mental and moral habits, including gentlemanly and fair-minded conduct, are better cultivated by holding the student responsible for setting and observing a proper standard, than by attempting to guide him by prescribed rules and penalties. Whenever, therefore, the Faculty become convinced that a student, either because of ill conduct or neglect of duty, is not making a proper use of the advantages of the University, they will summarily withdraw its privileges, or take such other action as may seem to them best. Moreover, each case will be judged in the light of attending circumstances, so that the same apparent offense in conduct or neglect of duty will not necessarily be visited with the same penalty.

3. A student who satisfactorily completes half the work assigned to any year, may have that work put to his credit, but he must pursue the studies in which he fails on reëxamination with the class to which those studies belong, and he must take, in addition, such studies in the next higher class as will make up the greater number of hours required of either of the two classes with which he has studies. No student shall recite with the Juniors if he has a Freshman condition, nor with the Seniors if he has a Sophomore condition.

This regulation shall not be so construed as to interfere with the right of the Faculty at any time to remand a student to the lower of the two classes with which he recites, or to suspend him for neglect of work.

These regulations supersede the detailed regulations heretofore in force, and their significance is important. They assume that students are gentlemen, and that as gentlemen they may be depended upon to carry into all the relations of college life the courtesies and amenities of social life. They remove from the student whatever stimulus to questionable conduct there may be in restrictive regulations; they will serve, at least so far as the University of California

is concerned, to test whether the gentlemanly instincts of students have but to be appealed to to be developed; whether self-government begets in students increased self-respect; whether relying upon a student's honor effectually stimulates him to deserve the confidence placed in him. They attempt to remove the ground of the traditional hostility between Faculty and students by making their interests identical.

Such a system of college government implies that the necessity for discipline at all involves the necessity for vigorous and effectual discipline, and so provides for the ready dismissal of any student who has not the habits or instincts of a gentleman or the tastes and ambition of a scholar. It provides, too, for the prompt removal of the student who is known to be wasting his time and jeopardizing the good order of the University or the studious habits of his fellows, even though he has not been detected in and indeed may not have committed any single outrageous act. The provision has been several times put into effectual operation during the year, and will doubtless continue in operation as long as occasion requires. It is confidently hoped that when this liberal and yet vigorous policy becomes understood and appreciated, there will be such a ready response on the part of the students to this appeal to their manhood, that the necessity for discipline will substantially disappear from the University. It is intended that young men who do not attend college for purposes of study shall find the University unattractive, and go elsewhere.

By a former regulation of the Faculty, a student who failed on three leading subjects of any year was compelled to go over the entire work of the year again, and thus be deprived of all hope of ever regaining a position in his class. Under Regulation 3, mentioned above, the student is credited with the work that he has satisfactorily done, provided it amounts to half the work of the year, and hopes are held out to him that with proper industry thereafter, he may make up deficiencies, and so finally graduate with his class. It is expected that a student who is unlikely to complete half the work of any year will not be allowed to remain at college. The new regulation consistently carries out the assumption on the part of the Faculty that students are at the University for an earnest purpose. It makes prominent the fact that the University is educational in its purposes, and not disciplinary. It is a place where educational opportunities are offered, and where proper recognition is accorded to the student who appropriates those opportunities and as rapidly as he appropriates them.

Course in Letters and Science.

The following course of study which embraces the characteristics of the proposed Letters and Science Course, but which the Faculty unanimously recommend to be designated as the Course in Letters and Politics, has been adopted and will be open to students who enter the class of 1886. The numerals opposite the several subjects indicate the number of hours per week given to the subject. The letter (E) denotes that the subject is elective, but students must elect enough subjects to make sixteen hours a week. Students who do not pass a satisfactory admission examination in chemistry are required to add chemistry to the subjects named in this scheme:

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Freshman.		Sophomore.	
First Term.	Second Term.	First Term.	Second Term.
English History---- 4	English History--- 4	General History --- 4	General History--- 4
Mathematics------- 4	Mathematics------ 4	Mathematics------ 4	English (E) ------- 4
English (E)-------- 4	English (E) ------ 4	English (E)------- 4	German (E)------- 4
German (E) ------- 4	German (E)------- 4	German (E) ------ 4	Latin (E) --------- 4
Latin (E)---------- 4	Latin (E)--------- 4	Latin (E)--------- 4	Greek (E)--------- 4
Greek (E) --------- 4	Greek (E) -------- 4	Greek (E) ------- 4	U. S. History------ 4

Junior.		Senior.	
First Term.	Second Term.	First Term.	Second Term.
Roman Law (E)---- 4	Political Economy- 4	Advanced Political Economy------- 4	History of Political Theories----- 4
English A (E) --- 4	English A (E) -- 4	English A (E) -- 4	English A (E)--- 4
English B (E) --- 4	English B (E) -- 4	English B (E) -- 4	English B (E)--- 4
German (E) ------- 2	German (E)------- 2	German (E) ------ 2	German (E)------- 2
Physics ---------- 4	Physics (E)------- 4	Philosophy (E)---- 3	Philosophy-------- 3
French (E) -------- 3	French (E) ------- 3	French (E) ------- 3	French (E)-------- 3
U. S. History ------ 4	U. S. History------ 4	Geology (E) ------ 3	U. S. History (E) -- 2
Zoology (E)-------- 2	Zoology (E)------- 2	Comparative Constitutional History -------- 4	Geology (E) ------- 3

The distinguishing feature of the course is the prominence given to history, political economy, and political theories, while an unusual opportunity is offered for a complete course in English and German, and for such acquaintance with science as every well educated man is expected to have. Political and financial theories that have been tried again and again, and have again and again failed, are constantly forced anew upon our people, often by honest but ill-informed law-makers. Views regarding the rights of property, communistic in their tendencies, if not professedly communistic, are not uncommon, and are sometimes urged until the prosperity and good order of communities are seriously endangered. It belongs to our colleges and universities to do all that is within their power so to acquaint the young men who, it is hoped, are to be the future leaders of the country, with the history of these failures and the harmfulness of these views, that our people may be saved from their constant repetition.

It belongs to our colleges and universities to give in addition such a liberal general education as shall enable their graduates to formulate and defend, or combat with intelligence and force, new views affecting the public interest. It is the purpose of this course to do a special service in this important matter.

Other important changes looking toward an enlargement of the opportunities for special work at the University are now under consideration. It is desirable, for example, and it is hoped that it may be practicable, so to enlarge and extend our elective courses that a student may pursue to as great completeness as is possible in our best colleges, courses in mathematics, Latin, Greek, English, and indeed in any of the subjects usually offered in the best colleges. The proposition does not look to the abridgment of any of the courses

now offered, but to such an enlargement of the opportunities for special work as will at the earliest possible moment place our University abreast in all respects of the best colleges of the country.

Needs.

The needs of the University are many and great. First among them, and including most of them, is the need of a large endowment. The University was planned on a large, perhaps an ambitious, scale. Not content with the typical New England college in which the ancient languages form the basis of the education given, the founders of the University of California determined to offer at once to the people of this new and thriving State all the educational advantages that New England has been two or more centuries in developing. The plan is good, but its very extent will prove its greatest weakness, if it is not properly administered. It is one thing to man efficiently a single college with a single course of study, varied only by electives within the course, but quite a different thing to man with equal efficiency an aggregation of colleges or a university. Our corps of instructors is larger than would be necessary for a single college, either of letters or of science, having even a larger attendance than the University now has, and our income is enough to pay such a corps of instructors more nearly adequate salaries than are now paid. But instead of one such college we have many. Now, whatever doubts there may be regarding the wisdom of so extensive a plan for a community so young, we are committed to this broad policy, and it behooves us to carry the work to a successful issue. Indeed, there would seem to be special reasons for believing that there is in California, if not an immediate need for a University on this broad basis, certainly a field for the development of such an one. It would only be commensurate with our material resources and prosperity, and a fit supplement to them. Indeed, I am of the opinion that, as a purely commercial enterprise, the ample endowment of the University would be a wise investment. We have only to add to our material advantages the best educational advantages to make the attractions of our State equal to those of any other State in the Union, in the eyes of people that we should most care to have settle among us. No material advantages compensate, in the eyes of a desirable population, for the loss of educational opportunities. And, as regards our educational possibilities, we have in some respects advantages over old Eastern institutions, in that we are not hampered by narrowing traditions. Now the first and prime essential to the proper development of our University is a Faculty learned enough and large enough to give as good instruction and as able guidance as can be had in all the branches of study usually found in colleges of science and the liberal arts. To retain such able and learned men, and to secure others like them, good and stable salaries must be paid; salaries that compare favorably with the earnings of successful men in the professions of law and medicine, and there must be withal a feeling of confidence in the stability and permanence of the institution; a feeling that whatever fluctuation of opinion there may be on matters of State policy or local interest, the University will always be the center of a common interest, and the common object of a hearty and liberal support.

Our corps of instructors is too small for the work contemplated.

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Our English department should be strengthened by a chair in English in contradistinction to English Literature, and by one or more additional instructorships in rhetorical work, including composition and theme writing. I cannot cease to wonder that our own language and literature should hold a secondary place in most colleges and universities. The study of the language, especially in its sources, instead of being made an essential or even an important part of our courses in English, has been for the most part relegated to the place of a specialty, and that, too, despite the unanimous testimony of Presidents and Professors who have expressed themselves on this point, that, among college students, deficiencies in English are more marked than in any other subject. Excellence of scholarship in English, and elegance of style, are certainly most frequently found among students and graduates, but the credit belongs more to their native ability and their self-directed study than to the encouragement or help of the colleges. If this is true, we should not be content to have our course in English merely equal to those usually found in the best colleges. It should easily outrank the best of them. There is, therefore, no chair that I should be so glad to see endowed, as a chair in English; none that I think would yield so desirable a return to the student and to the University.

The classes in German have so rapidly increased that the work is already more than any one man should be called upon to do, and it is likely soon to be beyond the power of a single instructor.

Special instruction should be provided in botany, and is almost a necessity in entomology.

It is certainly to be regretted that no permanent provision is made for instruction in the Gymnasium. Simple instruction in athletic exercises would be quite insufficient. For the proper direction of a gymnasium the instructor should be capable of giving systematic individual direction calculated to remedy individual physical defects.

Besides the further enlargement of our regular corps of instructors, there should be funds sufficient to enable your Board occasionally to invite distinguished lecturers from other colleges and universities to deliver courses at our University. I know of nothing more stimulating to a proper university spirit than contact with learned men from distinguished institutions in different parts of our country.

Chair of Mental and Moral Philosophy and Civil Polity.

Inquiries have been most industriously made, both by the committee to which the matter was referred, and by Mr. D. O. Mills, regarding a suitable candidate for the Mills Professorship of Mental and Moral Philosophy and Civil Polity. As yet no suitable, and at the same time available candidate has been found, and, with the wisdom and breadth of view that characterized the original gift, Mr. Mills has expressed the most earnest wish that the chair should remain vacant until it can be filled by a man whose merits place his selection beyond question.

While our courses of study in the Colleges of Science certainly compare favorably with like courses in other colleges, we are hardly doing what we may fairly claim that we should have the privilege of doing, and what I hope we shall eventually be able to do. We have Colleges of Agriculture, Mechanics, Mining, Engineering, and Chemistry, to which students are admitted, and, as it would seem, of

necessity admitted, with attainments altogether too slight to make it possible to give in them, during four years, the courses necessary to the professional degrees. The several Faculties have therefore very wisely made the courses of study in the first two years identical for all these colleges, and of a general disciplinary and culture character. With the Junior year a differentiation of studies begins, and the student is thereafter given subjects that bear directly upon the profession he intends to follow. But it is quite impossible, during the two remaining years, for the student to do the work necessary to his professional degree, and the several Faculties have, therefore, very wisely again, declined to do more than recommend all alike for the degree of Bachelor of Science. The remedy is not, at present at least, in raising our standard of admission to those colleges by the work of the Freshman year, or the Freshman and Sophomore years, but by post-graduate courses. If there were regularly organized schools in the State whose main purpose was preparation for the University, there might be a choice of remedies. I cannot willingly pass from this point without deprecating the haste that is so commonly made, especially, I think, in California, to get at the active work of life without reference, I was about to say, to fitness for the work chosen. I cannot but think that, for any profession, the year or two of extra work given by the student to perfecting himself in the science of his profession is time spent to the best possible advantage.

Indeed it is greatly to be regretted that all students do not complete one of the regular undergraduate courses before entering upon their special technical studies.

Post-graduate Courses.

The suggestion regarding post-graduate courses is not made with reference entirely to prospective students; applications for information regarding such courses have of late been made with such frequency as to indicate that there is at present something of a demand for them. Nor would the advantages of post-graduate courses be confined to the students pursuing them. The presence at the University of a body of young men of high aims and scholarly habits would have a most stimulating influence throughout the entire University. The obvious objection will be made, indeed it has already been made, that if these ample means of education are provided, and the requisite number of professors and instructors employed, the expenses of the University will be out of all proportion to the work to be done and the students in attendance. But education is not a commodity that can be accurately estimated in dollars and cents, nor is an instructor's value to a community to be measured by the number of students under him. If the cost of the individual student should be taken as at all indicating whether an institution is a profitable investment, the best colleges in the country would have to be closed. It has been again and again shown that even the colleges that require the largest tuition fees expend, in the education of each student, many hundred dollars more than they receive from him.

Encouragement of Original Research.

Something special should be said, too, and not by way of apology, for the necessity we should be under, if post-graduate courses of considerable fullness should be established, of having at the Univer-

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sity perhaps several professors and instructors with comparatively light work in the class room. It can hardly, however, be possible that the view of the duties of a professor which measures his usefulness and value solely by the duties of the recitation room is at all prevalent among our people. These duties are certainly important, but the University that does not encourage in her professors the spirit of original work—that does not feel honored in being the means, through her professors, of enlarging the field of human knowledge, or of improving the means of communicating it—deserves to have in her chairs only the men who have neither the ambition nor the capacity to do original work. For the present, perhaps, we must leave to older and better endowed institutions the honor of supporting distinguished men, whose entire time may be devoted to investigation, but we cannot afford not to offer inducements to men with powers of original research to remain.

But the claims of the University to larger endowments may be based upon more obvious, if not upon such high grounds. Our distance from the great centers of education places upon us something of an obligation to put within the easy reach of our sons and daughters educational advantages of the highest excellence. But it is evident that if we are to have a great university, a university rivaling the best in the country, it must be made so by offering the opportunities and the encouragements to be found at the best universities. There is perhaps danger of our deceiving ourselves by thinking that we are what, under our organization, it is possible for us to become. Our foundation is certainly broad enough, but with our present endowment it is quite impossible for us to build suitably upon it. If we are to have the best of its kind we must either narrow our field or enlarge our resources.

To make good the shrinkage in the income of the University due to the necessity of reinvesting maturing investments at a much lower rate of interest, and to provide and maintain the instruction and equipment necessary to such a development of the University as I have outlined, our endowment should be increased by a million dollars. Even with this endowment our resources will not equal those of some of the eastern colleges and universities that we hope to rival in educational advantages, and that we can rival only through resources abundant enough to get and keep distinguished men in our Faculties and provide them with the best known educational appliances.

Scholarships and Fellowships.

Hardly second in importance to an increase in our endowment is the establishment at the University of a liberal number of scholarships and fellowships to be awarded to promising young men and women of limited means. It is hardly necessary, perhaps, to mention anew a fact that has been so often observed and commented upon by college professors and others: that a large proportion of the students conspicuous for their industry and ability are young men of limited means, whose every educational step has cost them a struggle. Their very presence at college under such difficulties is a sufficient warrant for their pluck, that very good substitute for genius. It would be of great value to the University also to have such a body of students as these scholarships would bring; students whose high character and scholarly aims would be a moral and an

intellectual stimulus to the entire University. Such influences cannot be too much fostered, and are not likely to be overestimated. Such a body of students is a distinguishing characteristic of the Johns Hopkins University at Baltimore, and the liberal provision of fellowships has contributed very much to that most desirable result. Without such opportunities our University must lose many of these most desirable students. In one single eastern University the scholarships, loan fund, and other means of pecuniary assistance, yield annually about $40,000; very nearly half the entire income of our University. I know of no way by which one could do more good to the present generation and to posterity, and perpetuate a more enviable reputation, than by founding such scholarships and fellowships in our University. Fellowships that would allow the holder to pursue his studies in the East, or in Europe, would also be extremely desirable, for there are not unfrequently young men, and there may be young women, who very much desire to pursue their studies abroad, and to whom such fellowships would give the opportunity. I have now in mind two such cases, both most deserving; one a recent graduate, another still in the University; young men who, with proper opportunities, would be likely to reflect great credit upon the University, and to render great service to it, either as instructors or as leading educators in the schools that we hope soon to see built up throughout the State. Owing to the fact that a much smaller annual income will suffice to pay a student's expenses at the University of California than at most eastern colleges, the sum necessary to found a single scholarship is so inconsiderable as to warrant the hope that the University will not be long without a goodly number of them. Scholarship funds ranging from two thousand to five thousand dollars, and traveling fellowship funds of from ten to fifteen thousand dollars, would yield sufficient income to bring many a young man to the University who could not otherwise hope for a liberal education. To be sure, the income of two thousand dollars would not yield enough to pay a student's entire expenses, but it is not always, indeed it is seldom, desirable to take from a young man all necessity for special exertion, or even for self sacrifice. He who is not willing, and, in some degree, by his perseverance, able to help himself, does not deserve the help of others.

Want of Preparatory Schools.

I have thus far only considered what is necessary to enable us to offer to promising students superior educational advantages and unusual facilities for availing themselves of these advantages. There yet remains for solution a still more practical question of interest alike to the University and to those who wish to enjoy it. How shall the young men and the young women, especially those in the smaller towns and in the country, get proper preparation for the University? And here we are met by a strange anomaly, introduced by the new Constitution. Our well rounded system of public education, beginning with the primary school and ending with the University, is not unfrequently referred to by Californians with a pride that might be justifiable if we had such a system. But the new Constitution has given to the State free primary and grammar schools, and a free University, but has withdrawn all State support from high schools, the connecting link between the secondary schools and the University. High Schools are, by this provision, discountenanced, and if

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they are supported at all they must be supported by local taxation. The system is divided in its most vital part. The higher education is freely offered, but the means of obtaining suitable preparation for it are denied. This is not the place to discuss the question of the extent to which education at public expense should be given. It is my purpose simply to call attention to the remarkable attitude of the State in the matter, and to suggest a remedy. As nearly as I can determine, out of the fifty-two counties in the State but seven offer opportunities for preparation for the University at the public schools, and under the operation of the new Constitution the number of High Schools has already diminished by one. In other words, our boasted free University is free to those who can afford to pay for preparatory education, but practically cut off from those who are not able to incur this preliminary expense—the very persons whose education it is of especial interest to the State to secure. There should be no necessary gaps in American society, nothing that tends even artificially to the creation of caste, and least of all should any such tendency be found in our educational system. Education is the one avenue through which the young man of the slenderest means may hope to have an opportunity to measure himself with the most favored in the country, and it should therefore be kept as clear as possible. That it was a mistake to cut off all connection between our free schools and the University is now commonly admitted. It was doubtless urged as a strong reason for this action that high schools were not "practical" in their courses of study; that fitting for the University was unfitting for a business career. I believe that the more carefully the present requirements for admission to the University are examined, especially those for the scientific colleges, the more will they be found to contain only that which every well informed young man or woman should know upon entering upon the most ordinary pursuits of life. There should be established in every county in the State, and in every considerable town in the State, a school in which preparation for the University could be had. If such schools were established it would ultimately result, no doubt, that a connection would be formed between them and the University so intimate that passing from them to the University would be like passing from one class to another in the same school. Such schools, too, would systematize and unify education in the State as nothing else could do, for the University examinations would serve as a common and an unbiased means of comparing the excellence of the schools throughout the State. I can see no other way by which the University can be brought within the reach of every youth in the State. And again, the same thing may be said with reference to this point that has been said regarding other recommendations. If we are to hope to equal the best colleges and universities in the East we must be upheld by like support in our secondary schools. New England is filled with public schools that fit for her universities and colleges, and New England is therefore more universally and better educated than any other portion of the country. Nothing, again, would add so much to the attractions of the State as such a system of schools, and their establishment and support would be a wise business enterprise, if there were no higher motive.

College of Letters.

Our Classical Course, our Literary Course, and our Course in Letters and Science, are well developed, and compare favorably with those of Eastern Colleges. We, however, differ from the best of them in making Greek and Latin so long compulsory in the Classical Course, and in limiting the range of electives, especially in the Junior and Senior years. I cannot but think that this is unwise, and that the settled policy of learned institutions everywhere, to encourage special scholarship by offering special opportunities for the pursuit of a liberal course of advanced study in the different departments of learning, would be the best policy for us. In education, as in the industries of life, we must differentiate if we would attain the best results.

Agriculture.

The limited attendance upon the College of Agriculture, here as elsewhere, is often taken as indicating that there is not a sufficient demand for skilled agricultural labor to warrant the support of agricultural colleges. A large attendance of students is certainly desirable; but it would seem to be a mistaken idea to measure the value of an agricultural college by its attendance. There is too much intelligence among the farmers of to-day to allow them to remain long in ignorance of new discoveries in agricultural science. The scientific agriculturist makes an important discovery to-day, and to-morrow it is known throughout the entire agricultural community. The farmer does not, to be sure, work with the efficiency that would accompany an agricultural education, but his practical knowledge enables him to reap the substantial benefits of the discoveries of other men; and so the college would return to the community many times the cost of its support, even if there were not a single student in attendance. Indeed, the chief function of the Agricultural College at the present time would seem unquestionably to be agricultural experiment station work. Your attention is called to the further discussion of this point in the accompanying report of Professor Hilgard, a report whose recommendations in detail merit your most earnest consideration. The appendices mentioned therein are yet in course of preparation, and will be transmitted for publication as soon as completed.

Civil Engineering.

For the Department of Civil Engineering and Astronomy, additional surveying instruments are needed, also a small transit circle, a chronometer or an astronomical clock with electro chronograph attachment, and a zenith telescope, such as is used in the United States Coast and Geodetic Survey. An equatorially mounted telescope of five or six inches aperture, with clockwork attachment, would add greatly to the interest and profit of the instruction in this department. Professor Soulé has estimated that five thousand dollars would be sufficient to purchase these instruments and erect a building suitable for their reception. In connection with such an observatory, self-registering apparatus for recording temperature, barometric pressure, wind force and direction, and terrestrial tremors, might well be provided. The desirability of these additions to the laboratory department of this college is so evident as to need no argument.

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Chemistry.

The superior opportunities for the study of chemistry offered in our College of Chemistry are well known. Our chemical laboratory is equaled in but few colleges in the country. Nothing further need be said.

Laboratories.

The further development of our laboratories is of prime importance. To argue this point would be like arguing the necessity of a carpenter shop in teaching carpentry. In a communication to me regarding the necessity of additional apparatus for the physical laboratory, of which he is Superintendent, Instructor Slate has well said:

> The entire laboratory system in science teaching at the present time is founded on the experience that nothing acts so directly to organize one's knowledge as the necessity of applying it to the attainment of some desired end. The standing difficulty of a young graduate in getting started in life, is due to lack of practice in this direction, and may be, in great measure, obviated by exercise under intelligent guidance in the constructive application of his knowledge, which tests its definiteness, encourages the habit of combining to reach a given result, and acts as a stimulus to further acquirement. Literary men early recognized that a good test of a man's power is his ability to do positive work—to write good English in the expression of his thoughts. "Writing makes an exact man." We now take a similar position in science. Physics offers many advantages for this kind of discipline. Its wide range covers natural phenomena of many kinds, while the stage of development it has reached renders necessary the application of the student's mathematical and chemical knowledge, and thus stimulates the prosecution of these branches of science. The tendency to do things by guess work is discouraged and replaced by precision of thought, habits of weighing and measuring, which are not without direct influence on the character. The general effect of such training is to substitute for empiricism intelligence. The engineer will understand the optical principles of the instruments he uses, the sources of error and their comparative magnitude; the chemist will understand the balance and the thermometer and battery he uses, and so on through the list. Even the general student takes away from such a course a better idea of scientific experimental methods than can possibly be conveyed by mere description.

The physical laboratory is fairly started, but at least five thousand five hundred dollars are needed to furnish it with suitable apparatus. A detailed list of the apparatus needed is on file at the President's office. It is of great importance that this laboratory should be furnished at the earliest moment with the apparatus asked for.

Our mineralogical laboratory is well equipped, and in it unusual facilities are offered for this branch of study.

Mechanics and Mines.

And what has been said regarding other laboratories may be repeated regarding the laboratories and workshops in our Colleges of Mechanics and Mines.

As in agriculture, so in mechanics and mining, there are many problems of the greatest importance to the industries of the State that can nowhere else be so readily and so thoroughly solved as in the Colleges of Mechanics and Mines. Indeed, original investigation by instructors and advanced students, and the conducting of experiments of general interest, are not only legitimate functions, but should ultimately become most important functions of these colleges. There are, for example, important problems relating to hydraulics and mining machinery, and to the most economical methods of treating our so-called rebellious ores, that might properly be investigated in these colleges. The outlay that would be necessary to support, in great efficiency, all the colleges having so close a bearing upon our material development, would be returned again and again,

as was said regarding the College of Agriculture, if there were not a student in attendance, if they were but experiment stations. The complete carrying out of this plan would involve the occasional publication of bulletins containing the results of the investigations pursued; a thing indeed most desirable, both for the public and for the University.

The machinery for the mechanical laboratory and workshop is being put in place as rapidly as possible, and a skilled mechanic will be employed for its detailed management before the publication of this report. Here the necessary apparatus, working models, and diagrams for use in the lecture room, and the machines and implements used in conducting original investigations, will be made. Aside from the special experimental work that will be constantly conducted in this laboratory, the student will there be brought into direct contact with the application of the principles and problems that have engaged his attention in the class room. For the further development of this work about ten thousand dollars will be needed.

So also most excellent facilities for instruction are being rapidly developed in the College of Mines. A large and well equipped metallurgical laboratory has been built, containing among other appliances, eleven furnaces of different kinds, and a large assortment of apparatus for examining and assaying ores of all kinds. In it the student is required to make complete assays of the principal ores, and to verify the results until the instructor feels confident that his methods are correct, and that he has sufficient knowledge to detect and check his own errors. It is of the greatest importance to the fullest development of this college that to these appliances a small stamp battery and proper roasting and smelting furnaces, with the necessary equipments, should be added, so as to enable students to work small batches of ore by the same methods that are employed on a large scale. With these additional facilities the student would have the opportunity, and be required to use it, of examining, sampling, and assaying a given ore, deciding upon the best method of treatment, and of testing the accuracy of his conclusions by working the ore. This enlargement would enable us to enter upon a series of experiments, as before suggested, regarding the most economical method of treating our so called rebellious or refractory ores—a question of great importance to the further development of our mineral resources. The advantage of a school of mines thus thoroughly developed, and having such ample opportunities for students to visit and study the best and most typical mines on the coast, are obvious. If, to the theoretical training to be had in foreign schools, could be added this adaptation to our local needs—that is, the needs of the Pacific Coast—it is plain that no school could compare with it as a training school for mining and metallurgical engineers whose field of operation is to be on this coast. And such a school we should have, or none at all. Instructor Christy, who has charge of this department, and who has thus far developed it, has in preparation plans and estimates for the additional experimental work necessary to the further development of this college. They will be ready for your inspection at the proper time. It is hoped that there will be no necessity for urging the appropriation that will be required to carry out these plans.

I trust that in due time to our other laboratories may be added a

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zoölogical and a palæontological laboratory, and that with them may come a museum building with suitable recitation rooms adjoining, so that our collections may be used as working collections and not primarily for purposes of exhibition.

Library.

I may very properly speak of the library in connection with the laboratories of the University, for it is in truth our chief laboratory. Through the liberality of the late Michael Reese the library is in receipt of the very considerable sum of three thousand dollars a year. This sum, though not enough to develop the library as rapidly as is desirable, will serve to keep us fairly abreast of the literature of the day bearing upon subjects of special interest to the student. Indeed, the library is more valuable as a reference library than most libraries many times its size. It is cumbered with few books of little value, and a fair portion of the books are of peculiar value. It now numbers some twenty thousand volumes, a valuable portion of which was the gift of Mr. Pioche and Mr. H. D. Bacon. The circulating portion of the library, though of secondary importance to the reference portion, should yet be developed more rapidly than is possible with our present means. Additional endowments of the library would be most acceptable.

Art Gallery.

An art collection that promises to be of great value to the University has been initiated by gifts of paintings and statuary from Mr. Pioche and Mr. H. D. Bacon.

The collection received, during the year, a most valuable addition, in the gift of Mrs. Mark Hopkins, of Leutz's famous painting of Washington at Monmouth.

Following this report will be found a tabular view of the work done during the year in the different colleges at Berkeley.

While much remains to be done to make the University what, under its organization, it should become, it yet deserves better of the public than the public has known. It already offers better educational opportunities than are to be had at most Eastern institutions usually ranked above it. But its future depends upon the appreciation in which this excellent beginning is held, and upon the singleness of purpose, the intelligence, and the heartiness with which it is encouraged and fostered.

W. T. REID, President.

TABULAR STATEMENT OF COURSE OF STUDY.

By reading the columns headed "Classical Course," "Literary Course," etc., from top to bottom, and referring to the subjects opposite the numerals, the different subjects taken in any course and the relative time given to them may be seen, and by reading from left to right, the comparative time given to any subject in the different colleges or courses may be seen. The numerals in the columns headed "Classical Course," etc., indicate the number of hours per week given in those courses to the subjects opposite to which they appear. A numeral inclosed in a parenthesis indicates that the subject opposite to which it appears is elective:

	Classical Course	Literary Course	Course in Agriculture	Course in Mechanics	Course in Mining	Course in Engineering	Course in Chemistry
FRESHMAN, FIRST TERM.							
Latin.—Livy, Books XXI and XXII, 130 pp. [Jones]	4	4	---	---	---	---	---
Greek.—Boise & Freeman's selections from Greek authors. [Bunnell]	4	---	---	---	---	---	---
French.—Eugéne's Students' Comparative Grammar of the French Language; parts of speech; verb, irregular, pages 1–70; exercises, 36, pages 1–22. Reading "Le Roman d'un Jeune Homme Pauvre."—First act, 34 pp. [Henry Jones]	4	---	---	---	---	---	---
German.—Comfort's German Grammar, Part I, about 65 pages; Part II, about 15 pages. Comfort's Reader, about 30 pages. [Putzker]	---	4	---	---	---	---	---
Mathematics.—*Plane Geometry* completed from the point at which the student left off when admitted; 50 pp. [Edwards & Clarke]	3	3	---	---	---	---	---
Wilson's *Solid Geometry*, 100 pp. [Edwards & Clarke]	3	3	5	5	5	5	5
Wilson's *Conic Sections*, 85 pp. [Edwards & Clarke]	---	---	5	5	5	5	5
Olney's *Trigonometry*, 125 pp. [Edwards & Clarke]	---	---	5	5	5	5	5
English.—Bain's *Rhetoric;* Royce's *Logical Analysis;* Abbott's *How to Write Clearly;* Bain's *Higher Grammar;* Composition; Speaking; Library Work. [Royce]	5	5	6	6	6	6	6
Lectures on the History of the Language. [Sill]	1	1	---	---	---	---	---
FRESHMAN, SECOND TERM.							
Latin.—*Horace,* Odes, Epodes, Epist., 130 pp.; *Catullus,* Simpson's selections, 40 pp. [Jones]	4	---	---	---	---	---	---
Walford's *Cicero,* 50 pp.; *Ovid's* Metam., 35 pp. [Sears]	---	4	---	---	---	---	---
Greek.—Boise & Freeman's selections from Greek authors. [Bunnell]	4	---	---	---	---	---	---
French.—Eugéne's Grammar, Syntax, as far as syntax of articles and substantives, pages 86–109; exercises on construction, etc., eighteen exercises; reading and translating "Le Roman d'un Jeune Homme Pauvre," to the end; 2d and 5th acts, 60 pp. [Henry Jones]	4	---	---	---	---	---	---
German.—Comfort's German Course, Part I to page 140; Part II, about 15 pp.; Comfort's German Reader, about 30 pp. [Putzker]	---	4	4	4	4	4	4
Mathematics.—Wilson's Conic Sections, 85 pp. [Edwards and Clarke]	3	3	---	---	---	---	---
Newcomb's Algebra, 250 pp. [Edwards and Clarke]	---	---	5	5	5	5	5
Olney's Trigonometry, $1\frac{2}{3}5$ pp. [Edwards and Clarke]	---	---	5	5	5	5	5
Chemistry.—Eliot and Storer's *Manual of Elementary Chemistry.* [Rising]	---	---	4	4	4	4	4
English.—Abbott's *How to Write Clearly;* Composition. [Royce]	---	---	4	4	4	4	4

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TABULAR STATEMENT OF COURSE OF STUDY—Continued.

	Classical Course	Literary Course	Course in Agriculture	Course in Mechanics	Course in Mining	Course in Engineering	Course in Chemistry
SOPHOMORE, FIRST TERM.							
Latin.—Six lectures from Mr. Sears; Annals of Tacitus, two books, 40 pp.; Terence, one play, 60 pp. [Sears]	3	---	---	---	---	---	---
Walford's Cicero, 50 pp. [Sears]	---	3	---	---	---	---	---
Greek.—Apology and Crito of Plato; Alcestis of Euripides. [Bunnell]	3	---	---	---	---	---	---
French.—Les Fourberies de Scapin; Athalie; translations from English into French—detached pieces. [Henry Jones]	4	3	---	---	---	---	---
German.—Comfort's German Course, Part I, finished; portions of Part II; prose reading—"Das Wirthshaus im Spessart" and "Der Staat Friedrichs des Grossen," about 175 pp. (including notes). [Putzker]	---	4	4	4	4	4	4
Mathematics.—Newcomb's Alg., 200 pp. [Edwards and Clarke]	3	3	---	---	---	---	---
Wood's Analytical Geom., 230 pp. [Clarke]	---	---	2	2	2	2	2
Byerly's Differential Calculus, $2\frac{1}{2}0$ pp. [Edwards]	---	---	---	2	2	2	---
Calculus—Leading ideas of differential and integral calculus, with applications to the treatment of curves and physics; special prominence is given to *illustrative problems* which embody the fundamental ideas of calculus. [Slate]	---	---	---	3	3	3	---
Botany.—General. [Hilgard]	---	---	---	---	---	---	---
Drawing.—Use of the instruments; problems in descriptive geometry. [Browne]	---	---	---	---	4	4	4
Chemistry.—Inorganic: Lectures; Roscoe and Schorlemmer's *Treatise.* [Rising]	---	---	2	2	2	2	2
Analytical: Qualitative. [Stillman]	---	---	9	9	9	9	9
Eliot and Storer's *Manual of Elementary Chemistry;* Roscoe's *Manual of Inorganic Chemistry.* [Stillman]	---	3	---	---	---	---	---
SOPHOMORE, SECOND TERM.							
Latin.—Plautus, one play, 50 pp.; prose selections, 30 pp.; four lectures from Mr. Sears. [Sears]	3	3	---	---	---	---	---
Donne's selections (poetry), 50 pp. [Kellogg]	3	3	---	---	---	---	---
Greek.—Select orations of Lysias; Prometheus of Æschylus. [Bunnell]	3	---	---	---	---	---	---
French.—Tales by modern authors: "Les Jumeaux de l'hotel Corneille," par Edmund About, 42 pp., small print; "Ourika," par le Duchesse de Duras, 28 pp.; "Le Dot de Susette," par Frévée, 20 pp.; selections from Goldsmith's Essays, from English into French	4	---	---	---	---	---	---
German.—Prose readings: "Das Wirthshaus im Spessart," and "Der Staat Friedrichs des Grossen," about 175 pp.; Comfort's German Course, Part II, continued, particularly chapter on verb. [Putzker]	---	4	4	4	4	4	4
History.—Lectures. General history of Europe, from the death of the Emperor Theodosius (395) to the period of the Reformation. Text-books: Church, "The Beginning of the Middle Ages;" Bryce, "The Holy Roman Empire;" Bright, History of England, Vol. I. [Moses]	4	4	---	---	---	---	---
Mathematics.—Olney's Trigonometry, 125 pp. [Edwards & Clarke]	3	3	---	---	---	---	---
Byerly's Differential Calculus, 250 pp., completed. [Edwards]	---	---	---	4	4	4	---
Byerly's Integral Calculus, 160 pp. [Edwards]	---	---	---	4	4	4	---
Newcomb's Algebra, completed. [Edwards & Clarke]	3	3	---	---	---	---	---
Calculus, continuation of work of first term. [Slate]	---	---	---	3	3	3	---
Botany.—Systematic and economic. [Hilgard]	---	---	2	---	---	---	---
Drawing.—Shades and shadows; isometric projections, perspective. [Browne]	---	---	---	4	4	4	---

TABULAR STATEMENT OF COURSE OF STUDY—Continued.

	Classical Course	Literary Course	Course in Agriculture	Course in Mechanics	Course in Mining	Course in Engineering	Course in Chemistry
Chemistry.—Inorganic: Lectures; Roscoe and Schorlemmer's *Treatise.* [Rising]	---	---	2	2	2	2	2
Analytical: Qualitative. [Stillman]	---	---	9	9	9	9	9
Eliot and Storer's *Manual of Elementary Chemistry;* Roscoe's *Manual of Inorganic Chemistry.* [Stillman]	---	3	---	---	---	---	---
Blowpipe Analysis.—Lectures and practice in the qualitative analysis of simple and compound substances; Landauer's *Blowpipe Analysis.* [Rising]	---	---	---	4	---	4	---
English.—Composition; Speaking. [Royce]	2	2	---	---	---	---	---
JUNIOR, FIRST TERM.							
Latin.—*Ars Oratoria.* Selections from *Cicero* and *Quintilian,* 100 pp.; *Juvenal* Select Satires, 70 pp. [Kellogg]	5	---	---	---	---	---	---
The same, 80 and 60 pp. respectively. [Kellogg]	---	(5)	---	---	---	---	---
Roman Literature—Five sixths of Cruttwell and a few lectures by the Professor. [Kellogg]	(1)	(1)	---	---	---	---	---
Linguistics—All of Whitney's Language and Study of Language. [Kellogg]	(2)	(2)	---	---	---	---	---
Greek.—Lectures on Greek Archæology. [Bunnell]	(1)	(1)	---	---	---	---	---
French.—Work begun in Sophomore year continued, with omission of grammar; plays and tragedies continued. [Henry Jones]	(2)	(2)	---	---	---	---	---
German.—Comfort's German Reader, 40 pp.; Maria Stuart (the first four acts)	(2)	(2)	---	---	---	---	---
"Nathan der Weise;" "Wilhelm Tell" commenced. [Putzker]	---	---	2	2	2	2	---
History.—Lectures—General History of Europe from the beginning of Period of the Reformation to the Present Time; text-books: Häusser, "The Period of the Reformation;" Bright, History of England, Vols. II and III. [Moses]	4	4	---	---	---	---	---
Mathematics.—Kelland & Tait's "Introduction to Quarternions," Chaps. I–VIII, omitting "Additional Examples." [Clarke]	2	2	2	2	2	2	---
Analytical Mechanics.—Mathematical treatment of the main principles of mechanics, as a basis for the study of strength of materials, hydraulics, mathematical physics, and kinematics. [Slate]	---	---	---	4	4	4	---
Comparative Zoölogy.—Organs and Functions of Animal Life. [Jos. Le Conte]	(2)	2	2	2	---	2	2
Mineralogy.—Mineralogical Terminology, including Crystallography and Physical Properties; descriptive mineralogy commenced; reference for Crystallog., art. on "Crystallog." in Watts' Diction. of Chem., Vol. II; for descriptive mineralogy, Weisbach's Tables for Determination of Minerals by Physical Prop., used as synopsis. [Jackson]	---	---	2	---	2	---	2
Botany.—Systematic and Economic. [Hilgard]	---	---	2	---	---	---	---
Chemistry.—Agricultural. [Hilgard]							
Physics.—*Mechanics*—Properties of Matter; Measure of Force; Motion and Laws of Motion; Composition and Resolution of Forces; Centrifugal Force; Laws of Gravity and Falling Bodies; Center of Gravity; Elementary Machines; Laws of Friction; Motion on Inclined Planes; Theory of Pendulum; Impact of Bodies; Projectiles. *Mechanics of Liquids.*—Transmission of Pressure; Buoyancy; Specific Gravity; Motion of Liquids; Spouting Liquids; Motion of Water in Pipes, Canals, and Rivers; Theory of Water Motors; Hydraulic Ram. [Jno. Le Conte]	4	4	4	---	---	4	---

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TABULAR STATEMENT OF COURSE OF STUDY—Continued.

	Classical Course	Literary Course	Course in Agriculture	Course in Mechanics	Course in Mining	Course in Engineering	Course in Chemistry
Mining.—Nature and occurrence of ores; prospecting and exploring ore deposits; U. S. Mining Laws relating to locating and purchasing mining claims; open, cut, and quarry work; hand and machine drilling; explosives. [Christy]	---	---	---	---	2	---	---
Drawing.—Lettering; topographical mapping. [Browne]	---	---	---	6	6	6	---
Chemistry.—Analytical: Quantitative. [Rising]	---	---	9	---	9	---	15
Anglo-Saxon.—March's *Comparative Grammar;* March's *Reader.* [Sill]	(4)	(4)	---	---	---	---	---
JUNIOR, SECOND TERM.							
Latin.—Horace, three books of Odes, about 70 pp. [Kellogg]	---	(2)	---	---	---	---	---
Greek.—Demosthenes de Corona, Antigone of Sophocles, Clouds of Aristophanes. [Bunnell]	5	---	---	---	---	---	---
French.—Work begun in first term continued; plays and tragedies continued; lecture on history of French language. [Henry Jones]	(2)	(2)	---	---	---	---	---
German.—Finished "Maria Stuart" and read in "Jungfrau von Orleans," through the third act. [Putzker]	(2)	(2)	---	---	---	---	---
Finished "Wilhelm Tell" and read six of the longer poems of Schiller. [Putzker]	---	2	2	2	2	2	2
Political Economy.—Text-books: Perry, "Elements of Political Economy;" Jevons, "Money and the Mediums of Exchange;" Fawcett, "Manual of Political Economy;" lectures; essays and discourses by the students. [Moses]	4	4	---	---	---	---	---
Mathematics.—Kelland & Tait's "Introduction to Quarternions" completed, omitting Chapter X; work all reviewed, taking all "Additional Examples;" lectures. [Clarke]	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Analytical Mechanics.—Continuation of work of first term. [Slate]	---	---	---	4	4	4	---
Comparative Zoölogy.—Organs and Functions of Vegetable Life. [Jos. Le Conte]	---	2	2	2	---	2	2
Mineralogy.—Continuation and conclusion of Descriptive Mineralogy. [Jackson]	---	---	2	---	2	---	2
Chemistry.—Agricultural. [Hilgard]	---	---	3	---	---	---	---
Physics.—*Mechanics of Gases:* Laws of Compressibility and Elasticity; Pressure of Atmosphere; Theory of Pumps; Siphons. *Mechanics of Capillarity: Electricity;* Electrical Action; Electrical Forces; Leyden Jar; Mechanical and Chemical Effects; Atmospheric Electricity. *Magnetism:* Magnetic Forces; Terrestrial Magnetism; Diamagnetism. *Electro-Dynamics:* Power of Electro Magnets; Electro-dynamic Induction; Economy of Electro Motors. *Acoustics:* Propagation of Elastic Waves; Reflection. *Optics:* Velocity of Light; Photometry; Laws of Reflection, Refraction, and Dispersion; Spectroscope, Polarization, etc. [Jno. Le Conte]	(4)	(4)	4	---	---	---	4
Mining.—Blasting; tunneling, with methods of excavation and timbering in different kinds of ground; shaft sinking, timbering, walling, tubbing. [Christy]	---	---	---	---	2	---	---
Drawing.—Railroad mapping; mine mapping; working drawings of simple machine parts. [Browne]	---	---	---	6	6	6	---
Graphostatics.—Forces in Space; Centers of Gravity; analysis of stresses on parts of loaded structure. [Browne]	---	---	---	2	2	2	---
Chemistry.—Analytical: quantitative. [Rising]	---	---	---	---	9	9	15
Theoretical Chemistry: Lectures on Thermo-Chemistry, General Theory and Practice of Electrolysis, etc.; Cooke's *Chemical Philosophy.* [Rising]	---	---	---	---	---	---	1
English Literature.—Tyler's Morley's *Manual,* used as a handbook, with principal work in library; lectures. [Sill]	5	5	---	---	---	---	---
Composition.—[Sill]	(1)	(1)	---	---	---	---	---

TABULAR STATEMENT OF COURSE OF STUDY—Continued.

	Classical Course	Literary Course	Course in Agriculture	Course in Mechanics	Course in Mining	Course in Engineering	Course in Chemistry
SENIOR, FIRST TERM.							
Latin.—Comparative Philology; two lectures a week through the term. [Kellogg]	(2)	(2)	---	---	---	---	---
Greek.—Gorgias of Plato; Birds of Aristophanes; Œdipus of Sophocles. [Bunnell]	(5)	---	---	---	---	---	---
French.—History of French Literature by Demogeot, supplemented by readings from texts. [Henry Jones]	(2)	---	---	---	---	---	---
German.—Hermann and Dorothea, completed; one half of Part I of Faust. [Putzker]	(2)	(2)	---	---	---	---	---
Political Science.—Austin's "Jurisprudence;" Cooley, "Constitutional Law;" P. V. Smith, "English Institutions;" lectures; essays and discussions by the students. [Moses]	(4)	(4)	---	---	---	---	---
Mathematics.—Dostor's "Eléments de la Théorie des Determinants," Books I–IV. [Clarke]	(2)	(2)	(2)	(2)	(2)	(2)	---
Astronomy.—(Long Course.) [Soulé]	---	---	---	---	---	3	---
Geology.—Dynamical and Structural. [Jos. Le Conte]	(3)	(3)	3	3	3	3	3
Mineralogy.—Laboratory practice in determination of minerals by *physical properties only.* [Jackson]	---	---	4	---	4	---	4
Mechanics.—Strength of materials; determination of stresses caused by inner and outer forces	---	---	---	4	4	---	---
Theoretical Kinematics: applications to rolling and sliding contact, link motion, cam motion, governors, etc. [Hesse]	---	---	---	5	---	---	---
Civil Engineering.—Building materials, resistance of materials (lectures)	---	---	---	---	---	6	---
Visiting engineering structures. [Soulé]	---	---	---	---	---	1	---
Physics.—Continuation of course from second term of Junior Class. [Jno. Le Conte]	(4)	(4)	---	---	---	---	---
Physical Laboratory.—[Slate]	---	---	3	3	3	3	3
Mining.—*Metallurgy*—General part; classification of ores and processes; crushing and sampling ores; fuels; fluxes; refractory materials; furnaces; accessory machinery; metallurgical products. [Christy]	---	---	---	---	3	---	(3)
Drawing.—*Mechanical Engineering*—Applications in dynamics and strength of materials, with designs. *Civil Engineering*—Arches; applications in strength of materials. *Mining Engineering*—Applications in dynamics and strength of materials. [Browne]	---	---	---	6	---	9	---
Chemistry.—Analytical: quantitative. [Rising and O'Neill]	---	---	9	---	(6)	---	18
Organic: Principles of Chemical Structure; Relation of Chemical Structure to Chemical and Physical Properties; Classification of Organic Compounds; Cyanogen derivatives; Carbonic Acid derivatives; Paraffine Hydrocarbons; Alcohols, aldehydes, acids, etc.; sugars, starch, and allied compounds; Benzol derivatives; Glucosides, Allaloids, etc. [Stillman]	---	---	2	---	---	---	2
English.—Chief prose writers; composition. [Sill]	(4)	(4)	---	---	---	---	---
SENIOR, SECOND TERM.							
Latin.—Cicero's Tusc. Disp., 82 pp.; Horace: All the Epistles, 78 pp.	(5)	---	---	---	---	---	---
Cicero's Orations, 68 pp.; Virgil's Æneid, 47 pp. [Kellogg]	---	(5)	---	---	---	---	---
Greek.—Lectures on Greek Literature. [Bunnell]	(1)	---	---	---	---	---	---
French.—Continuation of first term's work. [Henry Jones]	(2)	---	---	---	---	---	---
German.—Part I of Faust completed; first two acts of "Nathan der Weise." [Putzker]	(2)	(2)	---	---	---	---	---
Mathematics.—Dostor's "Elements de la Théorie des Determinants" completed; Salmon's "Lessons Introductory to the Modern Higher Algebra," Lessons V to XVII. [Clarke]	(2)	(2)	(2)	(2)	(2)	(2)	---

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TABULAR STATEMENT OF COURSE OF STUDY—Continued.

	Classical Course	Literary Course	Course in Agriculture	Course in Mechanics	Course in Mining	Course in Engineering	Course in Chemistry
Geology.—Historical. [Jos. Le Conte]	(3)	(3)	3	3	3	3	3
Mineralogy.—Continuation of first term's work. [Jackson]	---	---	---	---	4	---	4
Mechanics.—Hydraulics	---	---	---	4	4	---	---
Continuation of Kinematics. [Hesse]	---	---	---	5	---	---	---
Civil Engineering.—Bridges, roofs, suspension bridges (lectures). [Soulé]	---	---	---	---	---	6	---
Visiting engineering structures (average)	---	---	---	---	---	1	---
Physical Laboratory.—[Slate]	---	---	3	3	---	(3)	3
Mining.—Metallurgy—Special part: Wet and dry methods of reduction of lead, gold, silver, and quicksilver ores	---	---	---	---	3	---	(3)
Assaying.—Five assays of lead, gold, silver, and quicksilver ores. [Christy]	---	---	---	---	6	---	---
Drawing.—Mechanical Engineering: Designs of hydraulic and hydrostatic machines. *Civil Engineering:* Designs of roofs, bridges, cranes, etc. [Browne]	---	---	---	6	6	9	---
Astronomy.—Ball's Astronomy, short course, with lectures. [Soulé]	3	3	---	---	---	---	---
Roman Law.—General treatment of the Law, Religion, and Institutions of the Romans; Hadley's *Introduction to Roman Law;* lectures on the Institutes of Gaius and of Justinian, with references to modern systems. [W. C. Jones]	(3)	(3)	---	---	---	---	---
Logic.—Formal and symbolic logic; nature and methods of thought; lectures and recitations. [Royce]	(3)	(3)	---	---	---	---	---
Chemistry.—Analytical: quantitative. [Rising and O'Neill]	---	---	9	---	(6)	---	18
Organic: Principles of Chemical Structure; Relation of Chemical Structure to Chemical and Physical Properties; Classification of Organic Compounds; Cyanogen derivatives; Carbonic Acid derivatives; Paraffine Hydrocarbons; Alcohols, aldehydes, acids, etc.; sugars, starch, and allied compounds; Benzol derivatives; Glucosides, Alkaloids, etc. [Stillman]	---	---	2	---	---	---	2
Physiological: General relations of organisms to surrounding conditions; Chemistry of Digestion, Secretions, Respiration, Blood, Tissues, and Chemical Functions of Organs. [Stillman]	(2)	(2)	---	---	---	---	(2)
Eliot & Storer's *Manual of Elementary Chemistry.* [Rising]	(3)	---	---	---	---	---	---
English.—Chief poets; composition. [Sill]	(4)	(4)	---	---	---	---	---

REPORT OF PROFESSOR E. W. HILGARD.

President W. T. Reid:

DEAR SIR: In response to your circular requesting suggestions regarding the "improvement and increased efficiency" of the department under my charge, I respectfully submit the points hereinafter noted, together with appendices embracing the results of the experiment station work carried on under my direction during the last two years.

The course of instruction in the subjects more directly related to agriculture has, during that period, been continued substantially as in the preceding years; the subjects of general as well as economic botany and agricultural chemistry being taught by myself, while the course of practical agriculture and special cultures has been given by Mr. Dwinelle, except only the subject of dairying, which has, as for some years past, formed the subject of a special course of twelve lectures by Mr. E. J. Wickson. In these courses the College of Agriculture has had its fair proportion of students among the scientific colleges.

It is nevertheless true that the numbers of those attending is very small in proportion to the predominance of agriculture as a pursuit. This is the case throughout the United States, and the causes leading to this state of things, which I have discussed in a late publication, are such that, in my opinion, it cannot be remedied by any direct action in the organization of the college, consistently with its character of a professional school. The unexhausted soils as yet yield rich returns even to rude culture, and as a consequence, farmers do not generally appreciate the utility and need of the use of trained intellect and science in their industry. And yet there is in California a more remunerative field for the exercise of discriminating judgment, and the application of science, than is the case in any other State of the Union. Owing to the great diversity of climates and soils, and their adaptation to a great variety of cultures, yielding high returns on small areas, fruit, and especially grape culture, with the use of irrigated lands, impart a character of permanence to agricultural investment that is not usual in States as young as this, and hence the instability of the pioneer farmer is largely offset by the obvious interest of the owner of such valuable properties, to maintain their value, and to increase and improve their products to the highest extent possible. There is, therefore, a real demand for agricultural science greater than in most States west of the Alleghany range. But it has not yet found its natural source of supply. To point this out, and to prove to farmers by actual demonstration the utility of the knowledge that the College of Agriculture offers to impart to their sons gratuitously, is, in my view, the most important function which, at the present time, the College of Agriculture can discharge.

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1. EXPERIMENT STATION WORK.

In elucidation of these views, I cannot do better than to quote, in this connection, part of a communication addressed by me to Governor Perkins on this subject in May last:

In the effort toward the fulfillment of the practical objects contemplated by that Act, considerable diversity of opinion has prevailed, and has found expression in a corresponding diversity of organization in the colleges established in the several States. Without entering upon a discussion of these, and of their respective merits, it may be said that one point has made itself prominently felt in all, namely: the need of a detailed knowledge of the agricultural features and special adaptations of the States and their several agricultural subdivisions, and of the experimental investigation of the numerous practical problems that meet the farmer at every turn, and upon the solution of which so often depends the question of profit or loss, success or failure. While the performance of the work of agricultural surveys and experiment stations by the colleges is not directly prescribed as one of their functions in the fundamental Act, experience has shown it to be one of the most important means at their command for benefiting agriculture at the present time, not only by the actual demonstration of the best methods of treating soils and crops under endlessly varying local conditions, but also in showing farmers the advantages to be derived from an intelligent observation of facts, and from the application of scientific knowledge and principles to their pursuit, thus inducing fathers to give their sons the opportunity of acquiring such knowledge for themselves in the institutions created for that purpose. The experiment station work seems, at the present stage of our agriculture, to offer the most direct mode of benefiting both the present and the future generations, since attendance upon agricultural schools will always be small so long as the soil is unexhausted, and offers to the rudest tillage, for the time being, rewards nearly as great as those realized by the most intelligent culture. Such a state of things can, it is true, be only of short duration, even in the most productive regions; and where cultures and methods involving large permanent investments prevail—as is the case in the vineyards, orchards, and irrigated lands of California—ordinary business prudence leads men to foresee and endeavor to provide against the inevitable and disastrous consequences of irrational and exhaustive cultivation.

It is thus that, compared with other and much older States, California has a more vital and immediate interest in progressive and rational agriculture; the more as her varied climates and soils present endless and most attractive opportunities for varied cultures and industries. It is thus that the experiment station work carried on so far by the agricultural department of the University, although very limited in its means, has nevertheless attracted considerable attention, and has been able to throw light on many important practical questions, as may be seen from the three reports of work thus far published. Besides a general investigation of the soils of the State; of the nature and remedies for the "alkali," with which some regions are afflicted; of the nature and effects of waters serving or intended to serve for irrigation; analyses of fruits, materials for sugar making, of grapes, wines, and musts: there have been made on the grounds of the University extended culture experiments on the effects of various fertilizers and methods of culture on the cereal and forage crops, while at the same time a very large number of new varieties of these have been introduced from Europe and elsewhere, their adaptation tested, and seed of the more promising kinds distributed over the State. The same course has been pursued in regard to other culture plants, and the garden of economic plants shows in actual cultivation, for experiment as well as for demonstration to classes, most of the important cultivated plants capable of out-door culture in the coast climate. The propagating houses, so far as their capacity allows, show the same for plants requiring protection; but here, unfortunately, the limit of accommodation is already reached, and the space falls far short of the needs of the department, though a great deal of interesting material is on hand. During the last two years, a large number of species of forest trees, from the East, Europe, Asia, and Australia, have been grown from imported seed, and some of these, including the cinchona, with other plants, have been distributed to intelligent persons in various parts of the State for trial. The University grounds are being utilized for the purposes of an illustrative and experimental arboretum, in which the adaptation of forest trees to the climate and for practical purposes will be tested. The investigation of noxious and beneficial insects, and of the means for repressing insects and other pests—such as the ground squirrel, for which an efficacious antidote has been found—is also in active progress.

It is, perhaps, needless to discuss the utility of these investigations toward the progress of agriculture and a knowledge of the resources of the State, which will be farther increased and diffused by the publication of an agricultural map of the State, now in course of preparation by myself, and soon to be issued by the census office. The utility would be greatly increased by the establishment of other experiment stations, located in representative localities in the several climatic and soil regions of the State, where local questions could be best investigated and determined, in coöperation with the central station at the University. To some extent this function has been performed by intelligent farmers in the various sections. But experimental work is, of necessity, expensive, and especially so where a great variety of operations is carried on on a small scale, as is the case at the University. The pecuniary benefits to be expected as their ultimate outcome will lie altogether outside of the experimental grounds, and at the present time the demand upon the department for information, investigation, and experiment has completely outrun its resources and the provisions made therefor by previous Legislatures.

In other words, I consider that the work of an agricultural experiment station, in which practical questions of all kinds that puzzle farmers in their daily pursuits are experimentally determined and answered, is the key to the situation, so far as the utility and public appreciation of the College of Agriculture is concerned. I would, therefore, earnestly urge that the Board of Regents should, so far as in them lies, endeavor to maintain and foster this part of our work, and to provide for it the means needful to its successful and unhampered development. It is, at best, a very heavy addition to the regular duties of the instructors, which are nowise diminished by a small attendance of pupils. This additional burden has been voluntarily and gratuitously assumed, and cheerfully borne, so long as a satisfactory rate of progress could be maintained. It cannot, however, be expected that this should continue indefinitely, especially under the stress of inadequate means and the performance of mere routine work of a clerical nature, coupled with all the vexations incident to the accumulation of retarded work. If the work is worth doing at all, it is worth while to have it well and promptly done.

The appropriation asked by the Board of the last Legislature ($5,000 per annum) has, as I represented in my last report, proved entirely inadequate to the operations of the department, with the increasing demands made upon it, and the necessary increase of compensation for competent employés. For the present year, the work on the agricultural grounds has been altogether restricted to the maintenance of the permanent planting. The garden of economic plants is reduced to half its size and complement of plants, no sowings having been made except of such seeds as would otherwise have been lost. The distribution of seeds and plants has, of necessity, been almost entirely omitted.

In view of this discouraging state of affairs, I respectfully request that timely measures be taken toward securing from the next Legislature a reasonably adequate appropriation for the purposes of the experiment station work. Failing which, it would be preferable to discontinue it until the public sentiment of the State shall demand its revival, with adequate provision for its maintenance.

FUNDS REQUIRED.

As to the amount actually needed, I have made a careful revision of the expenditure during the year when the work was on the most satisfactory footing, viz., 1881. Making due allowance for the deficiencies that occurred even then, I find that the average pay-roll per month for labor and superintendence must be placed at about $335, or say $4,000 per annum. Add to this $1,800 for the salary of the regular lecturer on practical agriculture, Mr. Dwinelle, and $120 for the course in dairying, to which should be added another similar one on viticulture, making $2,040 for instruction. For clerical and other work, such as could be performed by students employed by the hour—preparing and writing labels, making up and dispatching seed packages, the stenciling of a number of additional diagrams imperatively needed in the lecture room, labeling and arranging collections, etc., from $300 to $400 per annum should be provided for. Add to this the much needed purchase of some additional implements, plows, roller, etc., repairs, shoeing of horses, the purchase and distribution of seeds and plants, postage, and miscellaneous

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expenses in the maintenance of the propagating houses and garden, and at least $1,000 will be required over and above. I therefore respectfully suggest that an appropriation of *not less* than $7,500 per annum, or $15,000 for two years, be asked of the next Legislature on behalf of this work. I feel quite sure that such a request would be heartily seconded by the enlightened agricultural sentiment of the State.

If the above estimate for labor on the experimental grounds of the University should seem too high, in view of the small area so occupied, I would call attention to the fact that not only does the multiplicity of small plots, which have at times numbered no less than 650, preclude almost entirely the current use of labor-saving implements, by which many times the area could easily be kept under cultivation if occupied by one or a few crops; but the kind of labor employed has to be of the best class, "extra hands," qualified and willing to carry out faithfully and in detail all instructions given, and to be trusted for exercising some judgment of their own in doubtful cases. In addition, the application of the "eight hour law" to our work adds materially to its cost over and above that done in a private establishment.

The report of Professor Dwinelle on the experiments in field cultures, made during the past two years, and on other matters germane thereto, forms Appendix No. 2 to the present report. Among the greatest needs of the experimental grounds is the laying of about 3,000 feet of underdrains, for the relief of some of the best portions of the lands which are now almost unavailable for experimental purposes on account of their excessive wetness in Spring, and the washing away of the soil during heavy rains, destroying all comparison with adjoining plots differently situated. Professor Dwinelle's report give some details and estimates in this connection.

The report of Mr. W. G. Klee, gardener in general charge of the experimental grounds, on subjects connected with horticulture and forestry, forms Appendix No. 3, to which is added a list of donations of seeds, plants, etc., received during the period covered by the present report.

2. LABORATORY WORK.

In connection with this work, the employment of a competent laboratory assistant is of the utmost importance. I have in previous reports, called attention to the undesirable state of things in this respect, which virtually makes of the working laboratory a training school for analytical chemists, who in a year or two find more profitable employment, and thus compel the biennial repetition of the breaking in of a raw hand. This is a grave drawback upon the work, involving practically the loss of at least six months time in actual progress as the result of every such change; but also affects its quality, and for the time being is a heavy burden in addition to the regular and irregular duties of the department. A graduate of good ability will serve one, or possibly two years, at the low compensation now allowed (fifty dollars per month), for the sake of learning, but in order to retain him an increase of pay to at least seventy-five dollars per month is necessary after that. If such increase cannot be afforded out of the University funds, an allowance for that purpose should be made in the estimate of the appropriation for experiment station work, of which this position forms

an indispensable part. At the present time, the resignation of Mr. M. E. Jaffa, from the causes just recited, leaves the department without a chemist, and for the time being without an acceptable candidate for that position. Numerous requests for information, the replies to which involve some chemical work, are on file, but cannot be acted on.

A record and discussion of the laboratory work done since the last report was made, forms Appendix No. 1 to this report. It refers largely to the investigation, classification, and mapping out of the soils of the State, and with that end in view, the soil analyses heretofore made and reported upon, are re-introduced for the sake of completeness and comparison. Among the analyses are twelve of soils belonging to districts in which cotton culture may hereafter become a prominent industry, and which for that reason were selected by me for investigation in connection with the census report on the cotton production of the United States. The soils so analyzed under the auspices and at the expense of the census office, are introduced here by permission of the Superintendent of the Census, and marked by an asterisk (*). They were mostly collected by myself personally, while traveling during the recesses of the University, under the auspices and at the expense of the census office, with a view to the construction of a soil map to accompany a report upon the agricultural features of that part of the State adapted to cotton culture, which will be published during the coming year.

3. VITICULTURAL WORK.

The work in the viticultural laboratory, provided for by an appropriation of $3,000, made three years ago by the Legislature, has been continued (with occasional interruptions in favor of field work, on behalf of the Viticultural Commission) by Mr. F. W. Morse, who has been for some time past engaged in the elaboration of the results elicited by the work on the vintages of 1880 and 1881, as well as on samples furnished by wine makers in different parts of the State. The report on this subject forms Appendix No. 4 to the present communication, and will be found to embrace a good many important facts and suggestions in connection with the wine industry in this State. In the nature of the case, however, such investigations applied to only two crops, and a few only of the more prominent grape varieties, can merely serve to point out the way to farther prosecution of the research; as is always and unavoidably the case in agricultural investigations, where hasty conclusions are very apt to be upset by continued experience. The fund for this purpose is now exhausted, and unless the continuation of the special work is provided for by a renewal of the appropriation, it can hereafter only receive its proportionate share of attention among the other experimental work. This would be the more unfortunate, as the special practice and skill in this direction acquired by Mr. Morse, could not be commanded under the arrangements now in force in respect to the assistant in the general agricultural laboratory. In view of the slight running expenses, now that the laboratory and cellar are fitted up for work, an appropriation of $2,000 for the two coming years would suffice to provide for the continuation of these very desirable investigations.

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4. INSTRUCTION IN BOTANY.

It will be remembered that six years ago I took charge of instruction in botany, finding that course indispensable as an attractive introduction to the more strictly professional studies in my department. The result has, I think, justified my views in the matter; but, at the same time, the somewhat exacting nature of the botany course has compelled me, as a matter of physical necessity, to abridge greatly the course of agricultural chemistry. This is unfortunate as involving the properly fundamental study of the agricultural course, and is a source of complaint on the part of the special students. It would be exceedingly desirable to place at least the first part of the botany course, and preferably the whole, in the hands of a competent specialist, whether as a lecturer or a permanent chair of botany, such as exists in nearly all other collages, based upon the Morrill grant. The course of agricultural chemistry, extended to its legitimate scope, coupled with the duties of the experiment station work, would afford ample and very important occupation for myself, and a somewhat excessive strain from lecture duties, under which my health has been imperiled, would be measurably relieved.

5. INSTRUCTION IN GENERAL AND ECONOMIC ENTOMOLOGY.

Is clearly called for by the exigencies of the situation as regards insect pests in the State. The demand for information has caused Mr. Dwinelle to give considerable attention and time to the subject during the past year, and to give regular hours, outside of those called for by his regular engagement, to elementary and general instruction, and discussion of specially important groups, with the Senior class—the study having been made obligatory upon students in the agricultural course, by action of the Faculty. But the subject clearly demands such time and detailed study as can only be given it by a specialist, and I earnestly suggest that the attempt to obtain an endowment for a chair of general and economic entomology, made at the last session of the Legislature, be strenuously renewed at the coming session. Any efforts made by the Regents in this direction will be strongly seconded by the fruit-growing and general agricultural interests of the State, who are fully alive to the importance of a timely repression of the danger threatening some of our most important industries from the increase of noxious insects. The legislation now in force has prepared the way for what is obviously needed, systematic investigation and instruction in economic entomology. The donation recently made to the University, of a valuable collection of beetles, forms both a good beginning for instruction and a proof of the appreciation of the importance of farther steps to be taken in this matter. Professor Dwinelle's active participation in the war against noxious insects, as President of the State Board of Horticulture, has in addition to its practical usefulness, served to extend the appreciation of the work of the University in coöperating with all efforts for the benefit and improvement of agriculture in the State.

In conclusion, I beg leave to call attention to the fact that the matters mentioned under numbers two, three, four, and five, lie outside of the scope of the appropriation of $15,000 recommended for the general work, and would require additional funds to be carried into effect.

Very respectfully,

E. W. HILGARD,
Professor of Agriculture and Botany.

BERKELEY, August 1, 1882.

UNIVERSITY OF CALIFORNIA, MEDICAL DEPARTMENT,
SAN FRANCISCO, September 21, 1882.

W. T. Reid, A. M., President University of California:

DEAR SIR: I herewith present a report of the condition of the medical department, from the beginning of the session of 1881, to this date.

The number of matriculants for the session of 1881, was sixty-one. Of these, the Senior class numbered eighteen; the Junior, twenty-two; and the Freshman, twenty-one. Two of the Senior class withdrew, leaving sixteen who passed the required examinations at the end of the session, and received the degree.

At the beginning of the regular session of 1882, there were sixty-three matriculants. The Senior class numbered twenty-one; the Junior, fifteen; the Freshman, twenty-seven. The course of study comprises a series of lectures, delivered three days each week at the College building, and a series of clinics on the alternate days at the City and County Hospital.

The didactic chairs are Theory and Practice of Surgery, Theory and Practice of Medicine, Obstetrics and Gynecology, Anatomy, Physiology and Microscopy, Therapeutics, Materia Medica and Medical Chemistry, Mental Diseases and Medical Jurisprudence, and Hygiene.

The clinical chairs are Clinical and Operative Surgery, Clinical Medicine and Pathology, Ophthalmology and Otology, and Clinical Obstetrics and Gynecology.

Principles and Practice of Surgery; a course of sixty lectures is delivered in this department. A portion of the course is devoted to operations upon the cadaver, the students being drilled in the handling of surgical instruments and dressings.

Theory and Practice of Medicine; the lectures in this branch also number sixty, and present a systematic history of disease and the means which experience has pointed out as curative.

Obstetrics and Gynecology; this chair includes both a didactic and a clinical course of lectures; the former being delivered at the College, by the Professor of Obstetrics and Gynecology, the latter at the City and County Hospital, by the Lecturer on Obstetrics and Gynecology. The didactic course is illustrated by plates, specimens, and manikins. A portion of the course is devoted to demonstrations of the various obstetrical operations upon the cadaver.

Physiology and Microscopy; sixty lectures are delivered in this branch, and when necessary they are illustrated by vivisections and the practical use of the microscope.

Therapeutics; this chair has been vacant a portion of the present session, and the subjects comprised in the course have been taught by

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the Professors of Principles and Practice of Medicine and Materia Medica and Medical Chemistry.

Materia Medica and Medical Chemistry; in this course of forty lectures the history, method of preparation, and the action of the various substances comprising the materia medica, are described, and the combination of drugs is illustrated by pharmaceutical and chemical experiments.

Anatomy; the lectures on Anatomy number sixty, and are illustrated by dissections on the cadaver, and by dry and wax preparations of the various regions of the body. The course includes a series of dissections of every region of the cadaver by each student of the Freshman and Junior classes.

Medical Jurisprudence and Mental Diseases; a course of twenty lectures upon these subjects is given, in which the various phases of mental derangement, and the legal questions involved in this class of cases, are fully elucidated.

Hygiene; the course in this branch consists of twenty lectures on the principles of modern sanitary science, and the practical methods of reducing the evil effects of unsanitary conditions.

Clinical and Operative Surgery; the course in this branch is attended by the Senior students, who are required, each in turn, to take charge of cases, make the diagnosis, prognosis, and give an outline of the proper course of treatment. Bandages, dressings, and splints, are applied by them. All of the operations performed in the hospital are witnessed by the students in the operating room, and they here have an opportunity to assist directly in the operations.

Clinical Medicine and Pathology; the practice of medicine is exhibited to the Senior students by a series of sixty clinics, in which the students come directly in contact with the sick at the bedside, and examine and prescribe for them.

Ophthalmology and Otology; forty clinics are held upon diseases of the eye and ear during the session. The system of instruction is the same as that pursued in the surgical and medical clinics.

Clinical Obstetrics and Gynecology; this clinic is held twenty times during the course, and gives the senior students a practical familiarity with the management of labor cases. Each student has one or more cases which he conducts throughout by himself. In the gynecological clinic the students witness such operations as are performed in the hospital for the cure of surgical diseases of the female sexual organs.

Respectfully,

ROBERT A. McLEAN, Dean.

SAN FRANCISCO, October 2, 1882.

W. T. Reid, President of the University of California:

DEAR SIR: As Dean of the Faculty of the College of Pharmacy, I herewith submit to you a statement or report of the transactions and condition of this department of the University, up to the close of the college year, ending with the month of September, 1882.

To meet the wishes and convenience of the Regents of the University, the course in the College of Pharmacy, at your suggestion, was commenced a month earlier than formerly, in order that the names of the successful candidates for the Degree in Pharmacy might be presented to the Regents in time to be acted upon at the same time as the candidates for the Degrees in Medicine and Dentistry. The course of instruction in this department consists in lectures upon the several subjects—Chemistry, Materia Medica, Botany, and Pharmacy, with experiments and other illustrations. The course began the first Tuesday in April. before a larger class than any previous year, there being sixty-two matriculants in the class, thirty-five of whom were attending their first course; the remaining number had already attended one or more courses or parts of courses in this college. The lectures on Chemistry, Materia Medica, and Pharmacy were held in rotation on Tuesdays and Fridays of each week during the whole of the lecture season. Lectures were given on two of these subjects each evening, making four lectures a week in the three branches for twenty-six weeks. The lectures on Botany were given on Mondays of each week during the term, and botanical excursions were made every two weeks to different parts of the country, as previously arranged by the Professor of Botany, who always accompanied the students.

During the whole course, the lectures upon each subject were well attended, and commendable attention paid by the students, a larger percentage of whom presented themselves for the "Junior examination" than any previous year; thirty out of the thirty-five first course students came up for the examination.

The College of Pharmacy has for several years past, by permission of the Trustees of the Academy of Sciences, made use of their hall, corner of Dupont and California Streets, for lecture purposes, which, whilst being suitable in some respects, is in others totally inadequate to meet the present needs of this college. There is no suitable place to preserve and keep in order the library and the cabinet of specimens and apparatus used at the lectures; and it is only with the greatest difficulty on the part of the Professors that satisfactory illustrations can be made in the present quarters. The Trustees of the College of Pharmacy, anticipating that a change would soon have to be made, and feeling that the urgent needs of the present required that a permanent site should be at once secured, purchased, with the fund the college had accumulated during the past ten years, an available lot for a college building, and hope before the next session opens to procure sufficient funds and erect a suitable building thereon.

Although to be eligible to the Degree in Pharmacy, the candidate must give evidence of having had four years practical experience in the art, that he may better understand the application of his scientific training, yet a laboratory course of instruction in the college is a much needed branch, in fact, necessary to maintain that high standard amongst the graduates aimed at by the Trustees. They have not yet, however, been able to establish this course, not having the needed apparatus nor a suitable place in which to give the instruction. When the new building is erected every effort will be made to have laboratory instruction follow soon after, possibly by the time of commencing the next session.

Yours, very respectfully,

EMLEN PAINTER,

Dean California College Pharmacy.

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UNIVERSITY OF CALIFORNIA, DENTAL DEPARTMENT.
SAN FRANCISCO, October 31, 1882.

September 7th, 1881, the College of Dentistry was instituted by the Board of Regents of the University of California, consisting of the following chairs:

A. F. McLAIN, M. D., D. D. S., Professor of Dental Pathology and Therapeutics.
S. W. DENNIS, M. D., D. D. S., Professor of the Principles and Practice of Operative Dentistry and Dental Histology.
C. L. GODDARD, A. M., D. D. S., Professor of Mechanical Dentistry.
M. W. FISH, M. D., Professor of Physiology.
A. W. PERRY, M. D., Professor of Chemistry (resigned.)
WILLIAM LEWITT, M. D., Professor of Anatomy.
W. E. TAYLOR, M. D., Professor of the Principles and Practice of Surgery.

The Dental Faculty, appointed by the Board of Regents, held a meeting September 24, 1881, President Reid presiding, adopted by-laws, and elected the following officers, who were also to constitute the Executive Committee, namely: Dr. S. W. Dennis, Dean; Dr. C. L. Goddard, Secretary; Dr. A. F. McLain, Treasurer.

At a subsequent meeting, the following appointments were made by the Faculty as sub-Instructors: Morris J. Sullivan, D. D. S., Demonstrator of Operative Dentistry; J. W. Edwards, Demonstrator of Mechanical Dentistry; W. B. Lewitt, M. D., Demonstrator of Anatomy; E. O. Cochrane, Demonstrator of Continuous Gum Work.

The following were appointed Chemical Instructors: I. W. Lundborg; H. E. Knox, D. D. S.; R. E. Cole, D. D. S.; R. Cutlar, D. D. S.; G. O. Lawrence, D. M. D.; H. J. Plomteaux; H. C. Davis, L. D. S.; R. W. Henderson; J. L. Asoy, M. D.; J. H. Hatch, D. D. S.; L. L. Dunbar, D. D. S.; John Rabe, D. D. S.

Upon the resignation of A. W. Perry, M. D., as the Professor of Chemistry, A. L. Lengfeld, M. D., was appointed by the Board of Regents Professor of Materia Medica and Medical Chemistry.

The preliminary term commenced the first Tuesday in April, 1882, and continued four weeks.

The regular term commenced June 5, 1882, and continued until August thirty-first, excepting a vacation of two weeks in August. During that time over three hundred lectures were delivered.

The course of instruction consists of lectures by the various Professors, upon Operative Dentistry and Dental Histology, Dental Pathology and Therapeutics, Mechanical Dentistry, Anatomy, Physiology, Surgery, and Chemistry.

Dissections were carried on by the students the same as in the Medical Department, and under the same Demonstrators.

The Dental Dispensary, or operating room, has been open two hours a day—Mondays, Wednesdays, and Saturdays—at which time the students have operated under the supervision of the Demonstrator of Operative Dentistry, and received instruction in treating, filling, and extracting teeth for indigent patients, who presented themselves in abundant numbers. The Dental Laboratory was also opened two hours a day, upon the same days before mentioned, under the direction of the Demonstrator of Mechanical Dentistry.

The students have attended medical and surgical clinics at the City and County Hospital on Tuesday, Thursday, and Saturday mornings. Every Saturday afternoon has been set apart for special clinical instructions, held by the members of the Clinical Board.

The Demonstrator of Continuous Gum Work has performed his duties well in this important branch of the mechanical art.

The number of matriculates was thirty-one.

The Senior class is as follows: Charles W. Hibbard, Thomas W. Hall, Franklin F. Lord, M. D.; Thomas Morffew, H. J. Plomteaux, Gustave W. Sichel, M. D.; William H. Stanley, August Van Crombrugghe.

The Junior students are as follows: A. E. Blake, J. W. Decker, F. A. Bliss, M. F. Gabbs, J. N. Blood, W. H. Hogsbead, Charles Boxton, H. J. Lightbody, Maria A. Burch, W. E. Price, A. A. Chisholm, W F. Twist, G. W. Cool.

The remaining matriculates will enter the next class.

The number of students has far exceeded the expectations of the most sanguine. Many more have signified their intention of attending at the next term or some subsequent term.

As this is the only Dental College on this coast, there is every reason to expect large classes in the future, and the success of the department seems fully assured.

Yours, very respectfully,

S. W. DENNIS, Dean.

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FINANCIAL STATEMENTS.

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FINANCIAL STATEMENTS.

STATEMENT OF RECEIPTS, DISBURSEMENTS, AND INVESTMENTS,

From July 1, 1879, to June 30, 1882, inclusive.

RECEIPTS.		
For Account of Endowment and Trust Funds.		
Land Fund—Sales from grant of 150,000 acres	$93,363 63	
Excess Payments of $1 25 per acre due United States	8,673 89	
Brayton Property Mortgages	8,218 75	
State Fees—for affixing State Seal to Patents	286 00	
Michael Reese Donation	50,000 00	
Michael Reese Donation—Interest	12,019 43	
State Appropriations	69,101 98	
H. D. Bacon Donation	25,000 00	
Viticultural Fund—from Viticultural Commission	61 25	
Forfeited Seminary Land Fund	2,000 00	
Bills Receivable—for account of Land Fund	5,000 00	
F. L. A. Pioche Donation	2,500 00	
Hibernia Savings and Loan Society—withdrawn for investment in bonds	6,341 31	
Security Savings Bank of San Francisco—withdrawn for investment in bonds	5,917 88	
San Francisco Savings Union—withdrawn for investment in bonds	17,194 66	
Oakland Bank of Savings—withdrawn for investment in bonds	1,395 15	
Union Savings Bank of Oakland	14,305 32	
D. O. Mills Endowment	75,000 00	
D. O. Mills Endowment—Interest	3,013 35	
Total cash receipts		$399,392 60
DISBURSEMENTS.		
For Account of Endowments and Trust Funds.		
United States Endowment—investment of Land Fund in bonds	$63,903 50	
United States Endowment—deposit with savings banks, awaiting investment	10,495 83	
Brayton Real Estate Fund—deposit with savings banks, awaiting investment	14,504 17	
Brayton Real Estate Fund—investment in bonds	11,800 00	
Brayton Real Estate Fund—premium paid on bonds	520 00	
Bills Receivable—loan of M. Reese Donation	50,000 00	
Excess Payments—paid United States	27,827 92	
State Geological Survey—insurance on material	165 55	
State Fees—for affixing seal to patents	344 00	
Bacon Library and Art Gallery Building and Furniture (Appendix R)	55,950 91	
Mechanical Arts College Building (Appendix A)	1,539 39	
Mechanical and Mining Departments (Appendix B)	5,189 72	
Agricultural Department (Appendix C)	17,090 89	
Land Fund—returned for want of title	2,633 35	
Viticultural Fund (Appendix B)	2,706 90	
Land Administration Fund—investment in bonds	23,937 16	
Seminary Land Investment Fund—premium on bonds	250 00	
Brayton Property Mortgage Notes	387 50	
Mineralogical Department (Appendix Q)	4,815 26	
M. Reese Library Fund—purchase of books (Appendix N)	6,241 71	
M. Reese Library Fund—contingent	250 00	
Bills Receivable—loan of D. O. Mills Donation	75,000 00	
Special investment of bonds, with accrued interest	25,194 44	
Pioche Donation	1,108 75	
Total disbursements for account Endowments and Trust Funds		$401,856 95

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FINANCIAL STATEMENTS—Continued.

RECEIPTS		
Available for Payment of Current Expenses.		
Interest from Brayton Mortgage Notes	$10,159 01	
Interest from Brayton Real Estate Fund—investment in bonds	6,016 48	
Interest from balance due Agricultural Grant	45,152 16	
Interest from United States Endowment—investment in bonds	64,865 28	
Interest from Forfeited Seminary Lands	358 40	
Interest from Forfeited Seminary Lands Investment Fund—investment in bonds	3,936 75	
Interest from State Endowment—tide land bonds	150,097 99	
Interest from Diverted Funds	9,070 00	
Interest from Land Administration Fund	3,242 30	
Land fees—from certificates of purchase and patents	1,196 50	
Cottage rents	3,830 37	
Laboratory—from students for chemicals, etc.	3,696 45	
College celebrations—diploma fees	682 00	
Library Fund—donation from Hon. H. H. Haight	100 00	
Mining Department—fees from students for chemicals	227 87	
Equipment and Repairs—from Giant Powder Co. for damages	26 15	
Forfeited Public Building Land Fund	357 33	
Seminary Land Fund—interest	310 89	
Agricultural Department—from sales of hay	40 00	
Hibernia Savings and Loan Society—balance of interest	13 15	
Total receipts available for current expenses		$303,379 08
DISBURSEMENTS		
From Income in Payment of Current Expenses.		
Salaries—educational	$198,293 02	
Salaries Secretaries, Land Agent, Janitors, etc.	43,948 99	
Equipment and Repairs (Appendix D)	4,426 02	
Fuel	2,892 20	
Advertising and Printing (Appendix E)	898 82	
Telegraphing and Expressing	1,045 56	
Stationery	262 55	
Postage	801 35	
Rent of San Francisco offices	1,800 00	
University Printing Office (Appendix F)	139 24	
Land Administration (Appendix G)	3,594 85	
Incidental Expenses (Appendix H)	2,920 02	
University Site Improvement (Appendix I)	11,100 53	
Insurance (Appendix J)	6,975 90	
College Celebrations (Appendix K)	1,147 65	
Official and Lecturing expenses	911 32	
Apparatus	42 95	
Museum (Appendix L)	252 77	
Laboratory (Appendix M)	3,644 08	
Library (Appendix N)	2,935 12	
Contingent Fund	472 64	
Military Department (Appendix S)	414 44	
Interest and discount	102 55	
Land Interest—paid attorney's commissions for collection	650 79	
Fee Fund	14 00	
Water Rates—paid labor attending waterworks	23 00	
Repairs of Cottages (Appendix O)	1,000 31	
Seminary Land Investment Fund—accrued interest on bonds	100 00	
Diverted Fund Interest—attorney's fees	4,245 00	
Brayton Real Estate Fund—accrued interest advanced	719 44	
Land Administration Fund—accrued interest advanced	235 15	
University Water Company (Appendix T)	791 05	
Bacon Library and Art Gallery Building (Appendix R)	4,145 47	
Students' Cottages (Appendix O)	402 95	
Physical Laboratory (Appendix U)	531 91	
Agricultural Department (Appendix C)	449 10	
Total disbursements from income available for current expenses		$302,330 74

DISBURSEMENTS.

APPENDIX A.—*Mechanical Arts College Building.*		
Steam engine		$500 00
Cartage		13 50
Turning lathes, etc.		291 37
Furnaces		180 00
Freight		25 00
Brick and lime for furnaces		54 25
Tools		258 27
Furniture		217 00
		$1,539 39
APPENDIX B.—*Mechanical and Mining Departments.*		
Supplies for Mining Department		$811 98
Blacksmithing for Mining Department		10 87
Labor on furnaces in Mining Department		32 00
Mason work on furnaces in Mining Department		80 00
Coke for Mining Department		31 47
Cartage for Mining Department		15 00
Hardware for Mining Department		10 40
Apparatus for Mining Department		128 75
Chairs for Mining Department		8 62
Lumber for Mining Department		14 10
Plumbing in Mining Department		7 10
Blackboards for Mechanical Department		5 00
Bench plates, rubbers, etc., for Mechanical Department		48 00
Tools for Mechanical Department		90 09
Draughting materials for Mechanical Department		75 35
Assay lead and litharge		9 37
Chemicals		10 95
Expressage		1 25
English coke and hauling		59 74
Expense in arranging classrooms, etc.		298 00
Furniture, carpets, etc.		914 16
One gas engine, Mechanical Department		636 50
Clerical labor, Mechanical Department		5 00
One Kipp improved hydrometer generator, Mining Department		5 00
Six three-inch watch glasses, Mining Department		75
Six four-inch watch glasses, Mining Department		1 50
Six five-inch watch glasses, Mining Department		1 80
Six three-inch flat Becker covers, Mining Department		48
Six four-inch flat Becker covers		72
Six five-inch flat Becker covers		90
Six six-inch flat Becker covers		1 20
One one-quart copper retort		4 00
Two porcelain capsules and covers		1 80
One specimen gravel hydrometer		1 25
One hydrometer jar		40
Four six-inch plain V tubes		1 00
Four seven-inch plain V tubes		1 20
Two Lubig's potass bulbs		1 00
Five flat one eighth-inch J. R. tubes		30
Twenty flat three eighths-inch J. R. tubes		3 00
Five flat one half-inch J. R. tubes		1 00
One half pound bi. chlo. mercury	$ 75	
One pound arsenic powder	60	
One pound chlorate potass	50	
Nine pounds C. P. sulp. acid	3 60	
Ten ounces copper foil	1 00	
Two pounds nit. acid	1 30	
One pound bichromate potass	50	
Amounts carried forward	$8 25	$3,231 00

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DISBURSEMENTS—Continued.

Amounts brought forward		$3,231 00
Six pounds gran. zinc	$8 25	
Six pounds C. P. mur. acid	1 50	
Five pounds carb. ammonia	2 40	
Two pounds acetic acid	3 00	
Five pounds ferrocyan potass	70	
One half pound tartaric acid	5 00	
Four pounds hydrate potass	40	
One pound hydrate sodium	3 60	
	90	
	$25 75	
Less ten per cent.	2 57	
		23 18
Package		75
One coke screen, Mining Department		14 00
One half dozen No. 2 iron riddles		1 75
Two Becker scales No. 5		190 00
One Becker scale No. 7		95 00
One set Becker assay ton weights		6 00
Two sets Frœmner and gramme weights		14 00
One set Becker twenty gramme weights		14 00
One set Oertling twenty gramme weights		13 00
Two copper water baths		4 20
One Kipp apparatus, small size		3 50
One Kipp apparatus, medium		4 50
One liter flask, stoppered	$2 00	
One one half liter flask	1 25	
One one fourth liter flask	1 00	
One $\frac{100}{110}$ liter flask	50	
One stoppered grad. cylinder, 1,000 cc.	3 50	
One stoppered grad. cylinder, 500 cc.	2 00	
One stoppered grad. cylinder, 100 cc.	1 00	
One stoppered grad. cylinder, 50	65	
	$11 90	
Less twenty per cent.	2 38	
		9 52
Ten assorted burettes		14 00
Five swimmers		2 00
One sixth dozen burette stands		2 50
Five pepette		1 57
One copper air bath		5 50
One copper oil bath		8 00
Five square feet brass wire cloth		2 00
Two glass stop cocks		1 80
Ten rubber corks, No. 1	$ 50	
Ten rubber corks, No. 3	80	
Five rubber corks, No. 4	50	
Ten rubber corks, No. 5	1 20	
Ten rubber corks, No. 6	1 50	
Ten rubber corks, No. 7	2 00	
Ten rubber corks, No. 8	2 50	
Four rubber corks, No. 9	1 20	
Four rubber corks, No. 10	1 40	
	$11 60	
Less twenty per cent	2 32	
		9 28
One flat top iron retort, half pint	$2 25	
One nev. coal retort, one pint	4 50	
	$6 75	
Less ten per cent	67	
		6 08
Five thermometers		11 00
Eight evaporating dishes		10 80
One evaporating dish (heavy porcelain)		2 00
One dozen mattrasses, No. 35, quarter ounce	$1 25	
Amounts carried forward	$1 25	$3,700 93

DISBURSEMENTS—Continued.

Amounts brought forward	$1 25	$3,700 93
One dozen mattrasses, half ounce	1 25	
One dozen mattrasses, one ounce	1 25	
One half dozen porcelain crucibles, No. 9	1 20	
One half dozen porcelain crucibles, No. 8	1 50	
Four porcelain crucibles, No. 7	1 20	
	$7 65	
Less twenty per cent	1 52	
		6 13
One hundred and fifty mercury tubes, to order		18 50
Twelve feet I. R. tubing, quarter inch		1 20
Twenty-four feet I. R. tubing, five sixteenth inch		2 88
Six feet I. R. tubing, five eighth inch		1 20
Five quires Swedish filter paper		7 00
Half quire glazed paper		1 25
Two pairs shears, No. 4		2 50
One mining pan		75
One drying dish		7 50
One dozen shovels, to order		3 00
One pound nitrate of ammonia	$ 50	
Twenty pounds hypo. of soda	1 40	
Ten pounds red ox. iron	3 00	
Two pounds resin	10	
Two pounds beeswax	80	
One pound borax glass	1 00	
Two ounces nitrate of potash	60	
Four ounces sulpho-cyanide of ammonia	1 20	
One pound chlo. of calcium	1 00	
Four ounces lithemus	40	
Two ounces microcosmic salts	50	
Four ounces nitrate of potash	15	
	$10 65	
Less ten per cent	1 06	
		9 59
Six pounds copper wire		3 00
Four pounds copper wire		1 40
One complete distillation apparatus and cooler ..... Florins,	230 00	
Packing same	6 00	
One evaporating dish, four litres	2 80	
One evaporating dish, three litres	2 20	
One evaporating dish, two litres	1 80	
Two evaporating dishes, ninety mm	60	
Two evaporating dishes, one hundred and five mm	70	
Two evaporating dishes, one hundred and thirty mm	80	
Two evaporating dishes, one hundred and sixty mm	1 20	
One rotunde of grass for four boxes	21 00	
Four covers for same	8 50	
One tin digestion box, one litre	9 00	
One tin digestion box, half litre	6 35	
One porcelain digestion box, one litre	4 15	
One porcelain digestion box, half litre	3 10	
One tin plaster dish	2 00	
Extra packing expense	1 00	
	301 20	
Consul's charge	8 75	
	309 95	
Exchange on Berlin for florins		151 87
Ninety specimens of minerals ..... Marks,	300 00	
One hundred and seven specimens of minerals	300 00	
One hundred and sixteen specimens of minerals	330 00	
Two hundred and fifty specimens of minerals	560 00	
One hundred specimens of minerals	60 00	
Three hundred specimens of rocks	190 00	
Thirty specimens of slices of rocks (Lirkel's collection)	46 00	
Amounts carried forward	1,786 00	$3,918 70

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DISBURSEMENTS—Continued.

Amounts brought forward	1,786 00	$3,918 70
Thirty specimens of slices of rocks (Rosenbusoh's)	46 00	
Eighty specimens of wood models of crystals	50 00	
One box of one hundred mineral fragments for blowpipe	15 00	
One box of ten minerals (scale of hardness)	15 00	
Nine hundred and eighty-five specimens of paper trays	39 40	
Five hundred specimens of paper trays	40 00	
Printed labels, cases and packing	8 60	
Exchange on Berlin for Marks,	2,000 00	
Custom House broker charges		490 00
Two cathelometers Marks,	220 00	11 20
One Wiedermann galvanometer	210 00	
Hiezn rollenpaare, Cat. III, O	100 00	
One ordinary compensator	40 00	
One Jolly's air thermometer	160 00	
One Victor Meyer vapor density apparatus	36 00	
One Misch. calorimeter with vapor bath	90 00	
Exchange on Berlin for Marks,	856 00	
Repairing tools		209 72
Twenty-eight pounds C. P. nitric acid		2 50
One barrel Jersey fire clay		10 08
One table of thirty-two drawers, to order		6 00
One case of forty drawers, with glass case on top, to order		68 00
One large case, to order		112 00
Five hundred pounds English coke		130 00
One hundred fire brick		3 15
Hauling coke and brick		5 00
One hundred and twelve pounds bi-carb. soda		4 00
Eight pounds ammonia		5 60
Three pounds ammoniac oxalate		2 52
Fifty pounds Liverpool salt		4 05
Expressage		1 00
Two rings, to order		1 75
One scarifier mold		2 00
Four deep assay molds		1 25
Three brass sieves		4 60
One Mexican mahogany stand		4 80
One iron cupel tray		3 50
Sixty thousand and forty pounds English coke		1 50
One gross bottles, eight ounce		77 00
One dozen bottles, sixteen ounce		7 50
Corks		1 50
		80
Total expenditure for Mechanical and Mining Department		$5,189 72

APPENDIX C.—*Agricultural Department.*

Labor	$3,450 40
Labor on heating apparatus	36 75
Furnace doors and bars for heating apparatus	7 75
Tools and hardware	95 23
Freight and expressage	111 19
Lumber	33 70
Grain and seeds	128 03
Hay	31 50
Blacksmithing	22 77
Flower pots	42 22
Wire cloth, squirrel, gopher, and mouse traps	5 15
Japanese and other plants and trees	14 00
Three gross negative glass	12 85
Fifty burlap bags	4 50
Show cases, sash, and stakes	45 50
Lectures of E. J. Wickson	120 00
Riddle, sieve, and brush	1 90
Eleven barrels of lime	19 75
Amount carried forward	$4,181 19

DISBURSEMENTS—Continued.

Amount brought forward	$4,181 19
Four and one half tons of coal for steam heater	47 25
Shelf boxes	9 00
Candles	20
Wire cloth, needles, and French nails	3 85
One sash and glazing	4 10
Squirrel poison	75
Two grass hooks	1 50
Brooms, wrench, empty barrels and boxes	3 85
Fifty yards muslin	1 20
Expenses in arranging exhibit at Mechanics' Fair	5 20
One can coal oil	4 00
One record book	80
Three loads of sand	3 00
Charges of Custom House broker	10 65
One stop-cock	1 25
Tubing with cap	55
Plumbers' material	4 85
One distill	2 50
Half dozen 8-ply M. board	1 00
One paint brush	40
Five gallons coal tar, sprinkling pot, and grafting wax	2 55
One smoothing harrow	17 00
Chemicals, time and record books	5 75
Empty barrels	3 50
One scale beam	17 50
Eight and one-fifteenth glass tubing	6 00
Charcoal	8 80
Chemicals	55
Twelve glasses	1 50
Traveling expenses of F. W. Morse	1 05
Traveling expenses of W. Klee	6 60
Twelve yards toweling	1 71
Salary of C. H. Dwinelle	2,350 00
Labor from 1880, to April, 1881, inclusive	3,318 97
Lectures of E. J. Wickson	120 00
Horse feed	33 33
Fifty copies of "Rural Press"	5 00
Hardware	47 70
Scale frame	17 00
Blacksmithing	28 55
Leather, nitrate of soda, and charcoal	9 80
Seeds, plants, and trees	41 08
Bags, bagging, and tags	44 65
Expressage	34 10
Traveling expenses of W. G. Klee	15 55
Boxes and sash	73 75
Painting show cases	40 00
Lumber	10 95
Fuel	53 25
Two horses	300 00
Examining horses	2 00
Paper, lamp, paint, and pruning shears	22 75
Wire staple and punch, hose and fixtures	16 59
Bluestone and bonemeal	11 57
One set of double harness and two halters	43 50
Agricultural tools	39 60
Platform scales	20 00
Bottles and corks, and bisulphide	22 68
Pails, brooms, and can of oil	4 60
Grafting wax and seeds	4 95
Rope, brooms, lye, nails, and two pruning saws	6 60
Charges of Custom House broker	4 50
Record book and horse medicine	2 10
Currycomb, tools, and empty cases	7 35
Flower pots	15 60
One half-barrel of codling moth oil	15 34
Postage	65 25
Amount carried forward	$11,108 06

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DISBURSEMENTS—Continued.

Amount brought forward		$11,108 06
Repairing and whitening seed house		32 39
Paper bags, paper, and packing		3 50
Labor for the month of May, 1881		313 00
Labor for the month of June, 1881		358 00
Labor for the month of July, 1881		347 00
Salary of C. H. Dwinelle for July, 1881		125 00
Salary of C. H. Dwinelle for August, 1881		150 00
Labor for the month of August, 1881		241 50
Five hundred shingles for labels		1 20
Traveling expenses of W. G. Klee		2 00
Shoeing horses		10 00
Eighteen pounds bisulph. carbon		1 80
Twelve pounds bisulph. carbon and can for distributing		2 00
Six sacks of charcoal		4 50
Assorted seeds		12 18
Half dozen two-gallon demijohns		3 00
Half dozen five-gallon demijohns, boxed		9 00
Two gross one-drachm homeopathic vials		2 25
Half gross two-drachm homeopathic vials		62
Half gross three-drachm homeopathic vials		88
Corks		1 00
Five hundred lath		1 75
Salary of C. H. Dwinelle for September, 1881		150 00
Labor for the month of September, 1881		214 00
Pressing thirteen tons of hay		26 00
Insect powder and insufflator		2 20
Expressage		1 15
One box of matches, $1; one ball of twine, 50 cents		1 50
Sharpening two drills		75
One handle and cross-pin rods		1 50
Eight horse shoes and five bolts		4 50
Salary of C. H. Dwinelle for October, 1881		150 00
Twelve lectures by E. J. Wickson		120 00
Labor for the month of October, 1881		182 00
Salary of C. H. Dwinelle for November, 1881		150 00
Labor for the month of November, 1881		180 00
Expressage		12 85
Four hoes and one steel rake		3 45
One bibb		70
Expressage		1 65
Six loads of sand		4 80
Matches and tacks		1 25
Postage stamps		11 00
Shoeing horses		8 00
Four bolts		50
Matches		50
Two night latches		2 50
Five hundred and twenty-eight grs. platinum wire and foil		13 20
One platinum evaporating dish, crucible, and cover		33 00
Manufacturing the above		3 75
Salary of C. H. Dwinelle for December, 1881		150 00
Salary of C. H. Dwinelle for January, 1882		150 00
Labor for the month of December, 1881		202 00
Shoeing horses		8 00
Sharpening and pointing plowshares		3 85
Two beams repaired		1 00
One headrake and cleavers		3 50
One staychain		25
One ton of ground barley		36 00
Twelve hundred pounds of bran		12 00
One pair of pruning shears		2 75
One pruning knife		1 25
One gross of three-inch screws		1 25
Twine, 30 cents; salt, 40 cents		70
One and a half loads of gas lime		1 50
Postage stamps		2 50
Traveling expenses of W. G. Klee		1 80
Amount carried forward		$14,599 73

DISBURSEMENTS—Continued.

Amount brought forward		$14,599 73
Three labeling pens		1 00
Two hundred sample bags		3 00
Two grafted chestnut trees		2 00
One quercus cuspidata		1 00
Assorted seeds		1 50
One-fourth pound quercus cuspidata		1 00
One-half pound quercus glabra		1 00
One hundred sample bags		1 50
Two barrels lime		3 50
Two sacks bone meal		5 00
One box glass		6 00
Twenty-five pounds flour sulphur		1 75
One case concentrated lye		4 00
Fifty feet hose		11 50
One pair couplings		25
Two reducers		1 00
Lumber		8 61
Six grates to order		2 40
Pattern work on same		1 00
Salary of C. H. Dwinelle, for February, 1882		150 00
Labor for the month of January, 1882		265 00
Labor for the month of February, 1882		293 50
Expressage on plants		45
One iron bound barrel		2 00
One pump and fixtures		31 57
One twin coupling		1 50
One case coal oil		1 75
One faucet		1 45
Salary of C. H. Dwinelle, for March		150 00
Salary for C. H. Dwinelle, for April		150 00
Labor for the month of March		336 00
Labor for the month of April		327 00
Expressage		11 00
Traveling expenses of W. G. Klee		2 20
Expressage		1 75
One lock, 75 cents; one paint brush, 50 cents		1 25
One half ton gas lime		2 50
Two pairs brass butts and screws		1 30
Six sacks charcoal		4 50
Two cases of lye		8 30
Three pair rubber gloves		4 50
Four and one half pounds of rope		1 10
Grafting wax and labels		2 75
Beeswax and turpentine		3 35
Two axes and one gross screws		5 00
One barrel lime		1 75
One stable broom and fork		2 00
Fifty M. T. cases and brushes		3 75
Postage stamps		10 00
Five gallons coal oil		1 75
One half gallon castor oil		1 00
Expressage		1 00
One pound sulph. ct. potassi		1 00
Blacksmithing		5 75
Plants		11 08
Salary of C. H. Dwinelle, for May, 1882		150 00
Two one-inch valves—James McGirney		2 50
Labor for the month of May		225 00
Eight horse shoes		4 00
Four plowshares pointed and sharpened		2 00
Repairing double-tree		2 00
Repairing plow beam		1 25
Repairing pitchforks		1 50
Traveling expenses of W. G. Klee		1 65
One four-inch elbow		30
One gallon linseed oil and can		95
Expressage from Oakland		2 00
Salary of C. H. Dwinelle, for June		150 00
Charged to State appropriation		$17,090 89

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DISBURSEMENTS—Continued.

Paid from General Fund:		
Two hundred hours extra clerical labor	$50 00	
Forty hours moving collections to upper rooms	10 00	
Fitting up rooms of Professor of Agriculture	381 20	
Total		$449 10

APPENDIX D.—*Equipment and Repairs.*

Plumbing, pipe, etc	$53 95
Carpets and matting	224 40
Hardware	170 74
Lumber	46 08
Glazing	51 36
Brooms, dusters, etc	74 58
Stove and pipe	26 30
Removing furniture	7 50
Sheet copper, wire, and glass tubes	8 35
Matches, turpentine, and oil	4 20
Chair legs	4 50
Paint	6 95
Coal hods, grate, and dust pans	15 00
Marble slabs	4 00
Binders' boards	2 75
Bluestone	75
Repairing furniture	38 25
Repairing plastering, etc	7 75
Blackboards	5 00
Ladders	10 60
Desk	20 00
Lithogram	5 00
Draughting materials	12 95
Expressage	11 10
Supplies for Physical Laboratory	28 60
Copper boiler for Physical Laboratory	67 00
Surveying materials	4 60
Shades for Gymnasium	10 00
Hardware	54 87
Clothes line hooks	50
Plumbing	142 58
Paint brushes	2 50
Inside blind	1 50
Repairs to club house	5 30
Repairs on roofs of North and South Halls	93 44
Repairing instruments—Engineering Department	14 50
Repairs on Laboratory	100 86
Repairs to North Hall	6 00
Repairing steam heater	32 00
Lead, diamond cutter, pokers, ash bins	21 25
Soap, matches, candles, spittoons, map cases, pins	12 25
Heaters for Mechanical Arts College building	92 25
Stoves and fixings	79 25
Lumber and shingles	91 51
Desk for Recorder	40 00
Geological map, exchange and expressage	58 25
Brooms and dusters	24 75
Coal hods	4 75
Lard oil	75
Blacksmithing	2 00
Bradford heater and fixings	28 65
Rubber tubing	4 16
Boiler for asphalting	5 00
Piping	14 58
Glass and putty	2 32
Sewer pipe	1 20
Fire proof vault	630 00
Voucher boxes in vault	30 00
Chairs for Regents' room	13 25
Amount carried forward	$2,532 48

DISBURSEMENTS—Continued.

Amount brought forward	$2,532 48
Water pipe, etc.	97 23
Repairing surveying instruments	30 25
Three and one half yards duck	2 62
Chalk, crayons, and erasers	16 00
Binding mats	2 50
Brooms, coal hods, and dust pans	34 03
Bath tub and fixtures	20 00
One blower	2 00
Repairing skylight and roof	27 00
One water pitcher	75
Drawing paper	3 00
Lime, potash, lard, etc.	4 50
Two fire grates	4 00
Twelve fire extinguishers	475 00
Chemicals for same	41 88
Carpenters' tools	28 37
Repairing clock	2 00
Repairing room in barn	3 15
Wire guards for armory	2 75
Matches and soap	3 85
Building fence	40 00
One waste basket	1 25
Cleaning and relaying carpets, Regents' room	8 30
Carpets	344 64
Painting and glazing	130 40
Paints and oils, and brushes	16 00
Plumbers' material	10 63
Hardware	38 21
Repairing steam heating apparatus	395 44
Stoves, stovepipe, and elbows	32 30
Lumber and posts	75 49
Total	$4,426 02

APPENDIX E.—*Advertising and Printing.*

University press, for printing bulletins, programmes, lists for library and museum, and class schedules	$289 97
In sundry newspapers, commencement exercises, examinations, and proposals for fuel	175 95
University press, for printing bulletins, lists of standing committees, schedules of studies, placards, and tags	85 75
In sundry newspapers, commencement exercises, examinations, proposals for fuel, and funeral notice	134 55
University press, for printing bulletins, schedules of studies, placards, etc.	32 90
Greek examinations	7 00
Briefs	22 00
In sundry newspapers, commencement exercises, proposals for fuel, etc.	150 70
Total	$898 82

APPENDIX F.—*University Printing Office.*

For printing press	$50 00
For type	40 40
For reglet, furniture, leads, and slugs	9 54
For type and rule	5 20
For repairing press and roller box	3 50
For felt blanket	7 80
For printing material	5 80
For type	17 00
Total	$139 24

APPENDIX G.—*Land Administration.*

Stationery	$96 81
San Francisco Directory	5 00
Postage and Post Office box rent	21 35
Chair cushions	2 50
Fuel	13 00
Amount carried forward	$138 66

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DISBURSEMENTS—Continued.

Amount brought forward	$138 66
Janitor's salary	60 25
Attorneys' fees	428 25
Extra clerical services	288 05
Land Agent's traveling expenses	164 00
Fees and costs of suits	116 90
Postage and Post Office box rent	78 36
Janitor's salary	50 50
Land Agent's traveling expenses	204 50
Advertising	148 50
Locks and keys	4 90
Expressage	3 25
Contract with E. O. F. Hastings	1,102 26
Western Union Telegraph Company	38 94
Pacific Bell Telephone Company	16 45
American District Telegraph Company	13 00
Repairing clock and coal hod	4 50
Stationery	30 32
Refilling facsimilator and sponges	2 65
Extra clerical services	32 70
Fees for legal services	7 00
D. O. Mills, Treasurer	152 20
L. Carson	32 00
Fuel	22 00
Postage stamps and box rent	42 80
Janitor's salary	77 50
Land Agent's traveling expenses	134 50
Expressage	2 85
Western Union Telegraph Company	14 03
Pacific Bell Telephone Company	63 00
American District Telegraph Company	14 90
Stationery and printing	72 48
Fuel	18 85
Map of Nevada County	8 00
Cleaning and relaying carpets	5 80
Total	$3,594 85

APPENDIX H.—*Incidental Expenses.*

Attorneys' fees	$789 50
Abstract of title to Brayton real estate	62 25
Report of Water Commission, and map	15 00
One hundred and fifty copies of Record-Union and mailing	8 30
Extra pay to men at fire	10 00
Extra clerical services	20 40
Copying	1 00
Notary fees	6 00
San Francisco Directory	5 00
Expenses of Recorder to San Francisco	2 60
Watering grounds	44 75
Notaries' fees	11 00
Copying	12 00
Printing names in certificates	2 00
Recording mortgage and certified abstract of Brayton property	32 25
A. L. Bancroft & Co.	72
Collating resolutions of the Board in force	25 00
Extra clerical services	129 60
Printing briefs	20 00
Bringing bonds into Court	5 00
Repairing University carriage	17 50
Law books	24 70
Release of mortgages	2 00
Taxes on Brayton property	10 00
Clerical services, preparing annual report of Secretary	50 10
Attorney's fees *in re* Montgomery Avenue bonds	70 60
Costs of Justice Court, McNally *vs.* Rising	11 50
Settlement of suit, McNally *vs.* Rising	122 00
Expert's examination of accounts and records of University	320 00
Copying legal documents	10 25
Amount carried forward	$1,841 22

DISBURSEMENTS—Continued.

Amount brought forward	$1,841 22
Costs of suit, Regents *vs.* Pfeiffer	40 20
Wire cord for hanging pictures	1 75
Abstract of title of University real estate	300 00
Survey and maps of University real estate	577 00
Directing and mailing placards	6 30
Affidavits of security *in re* State appt.	1 50
Salaries of special police	47 50
Posting police notices	6 30
Police badges	5 00
Extra clerical services	90 00
Squirrel poison	3 25
Total	$2,920 02

APPENDIX I.—*University Site Improvements.*

Labor	$3,140 75
Feed for horses	73 98
Liniment and oil	1 25
Cement	2 25
Shovels, pick handles, and nails	23 30
Twelve loads of gravel and hauling	33 00
Powder and fuse	99 50
Stationery	3 70
Coal oil, brooms, ax handles	5 10
Grafting wax	30
Trees	1 25
Carpenter work	16 00
Gas dies and screwplates	12 75
Hay	10 00
Blacksmithing	211 03
Lumber	239 05
Labor	3,100 50
Carpenter work	25 50
Lumber and shingles	229 32
Powder	88 90
Blacksmithing	103 42
Feed for horses	52 88
Repairs to instruments and horse collars	6 00
Doctoring horse	25 00
Nails	10 00
Pressing hay	32 00
Two gallons nut oil	2 00
Grading	33 00
Drawing paper and cord	2 25
Brooms, combs, brushes	5 00
Soap	75
Liniment	1 25
One hundred feet of three-inch pipe	13 50
Oatmeal and mustard	85
Expressage on trees	4 50
Labor	2,596 00
Lumber for bridges, etc.	193 29
Blacksmithing	134 05
Feed for horses	62 24
Rosin and gargling oil	2 00
Sawdust	2 00
Forty-four loads of gravel	17 60
Building sidewalks, as per contract	479 32
Four hundred pounds of seed oats	8 00
Two sacks of rye grass seed	36 90
Nails	2 50
Scythes, rakes, and auger handle	9 80
Filing crosscut saw	2 00
Repairing harness	1 75
Total	$11,157 28
Less credits for pasturage and rent, $55; labor, $1; old material, 75 cents	56 75
Total	$11,100 53

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DISBURSEMENTS—Continued.

APPENDIX J.—*Insurance.*

Insurance premium on North and South Hall and Mechanical Arts College Building	$1,607 20
Insurance premium on cottages	83 25
Insurance premium on barn	34 40
Premium on North and South Halls and Mechanical Arts College Building	1,607 20
Premium on cottages, barn, and contents	124 40
Premium on Bacon Art works and books	168 00
Premium on Bacon Art and Library Building	450 00
Premiums on North and South Halls	2,123 75
Premium on Mechanical Arts College Building	416 25
Premiums on cottages	92 50
Premiums on Gymnasium	148 50
Premiums on Gymnasium and barn	17 85
Premiums on statuary and paintings	102 60
Total	$6,975 90

APPENDIX K.—*College Celebrations.*

Expenses of Commencement Day	$164 75
Diplomas, lettering the same, and ribbons	329 00
Examination papers	43 00
Examination papers	11 00
Labor	29 00
Lettering diplomas	5 25
Diplomas	47 50
Music	90 60
Printing order of exercises	7 00
Labor	29 25
Lettering diplomas	1 50
Diplomas	79 00
Commencement Day expenses	139 40
Expenses of dedication of Bacon Art and Library Building	157 90
Engrossing certificates of proficiency	13 50
Total	$1,147 65

APPENDIX L.—*Museum.*

Specimens and traveling expenses of Curator	$19 95
Chemicals	8 10
Alcohol	12 25
Freight bills and express charges	26 45
Hardware	12 37
Oil, varnish, brush, artificial eyes, alcohol, and wire	9 65
Tables	39 00
Bench screw, cloth, and alum	2 50
Expressage	17 25
Postage	3 00
Specimens, supplies, and traveling expenses of Curator	22 95
Six dozen stoppered bottles	32 50
Paper boxes, assorted	25 00
Files, hooks, and copper wire	2 55
Paint brushes, arsenic, glue, etc.	3 00
One white owl, mounted	10 00
Eyes and pins	4 00
Twelve pounds wire	1 50
Plaster	50
Expressage	25
Total	$252 77

APPENDIX M.—*Chemical Laboratory.*

Chemicals	$137 64
Gasoline	244 30
Acid apparatus—platinum retort, etc.	458 50
Charcoal	32 00
Half yard of rubber cloth	1 50
Freight and expressage	13 26
Tubing, evaporating dishes, blowpipes, etc.	88 20
Amount carried forward	$975 40

DISBURSEMENTS—Continued.

Amount brought forward	$975 40
One sheepskin	75
Washing	1 50
Sealing wax	2 62
Glassware	221 32
Acids	62 17
Alcohol	37 90
Rubber tubing	6 75
Copper wire, sheet brass, etc.	5 13
Brass screen	7 50
Starch	90
Morphine	1 00
Alcohol, oil stove, wire, nut oil, coal oil, and ammonia	167 52
Rubber tubing, blowpipe, and supplies	53 25
Chemicals	992 72
Gasoline	227 50
Bromine	1 25
Expressage	17 50
Chemicals	269 86
Gasoline	210 00
Chamois skins and sponges	8 25
Deflagrating spoons, magnesium ribbon and screens	7 33
Copper retort, brass screen, and percolator	4 50
Copper, copper tubing, and wire	4 76
Sheet zinc	6 53
Rubber tubing, packing, and gloves	25 81
Charges of Custom House broker	16 80
Two barrels coal oil	25 65
Assay weights and scissors	2 75
Four dozen reagent bottles	10 68
Six blank books	6 00
Freight and expressage	41 29
Mechanical tools	36 38
Coal oil stoves, screens, and wicks	53 06
One dozen blowpipes	4 35
One blowpipe, nickel plated	2 00
Eight watch glasses	2 90
Twelve dozen beakers	16 25
Two large crucibles	1 50
Brass wire cloth	5 63
Seven twelfths gross test tubes	5 75
One blowpipe lamp	3 00
One blowpipe forceps	50
Four spools iron wire	1 00
Coal oil cans	75
One small microscope	71 30
Asbestos cloth, tin plates, and brass trimmings	2 05
Two charcoal saws	1 20
Two and one half gallons nut oil	1 83
Anthracite coal	11 74
Total	$3,644 08

APPENDIX N.—*Library.*

Purchase of books	$1,601 86
Purchase of periodicals and catalogues	231 72
Card case and cards	63 93
Freight	10 40
Stationery	3 70
Mounting fifty-eight photographs of New Zealand scenery	4 00
Photographic views of the University buildings	7 50
Purchase of books	287 03
Purchase of periodicals and catalogues	399 18
Binding books	289 10
Three thousand cards	9 75
Expressage, and flour for making paste	4 85
Charges of Custom House broker	4 60
Postage	9 00
Expense of moving books	8 50
Total	$2,935 12

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DISBURSEMENTS—Continued.

Library, expenditure from Reese Library Donation Interest.

Rubber stamps	$5 00
Ten yards muslin	1 00
World's Atlas	28 00
Eight covers and binders	2 80
Traveling expenses of Librarian	2 50
Manual of Conchology	20 00
Purchase of books	4,546 72
Binding books	214 34
Periodicals	353 35
Charges of Custom House broker	16 80
Freight and expressage	269 27
Purchase of books	781 93
Total	$6,241 71

APPENDIX O.—*Repairs on Cottages.*

For kalsomining Cottage No. 2	$35 00
For plumbing Cottage No. 2	17 75
For repairing Cottage No. 8	65 00
For hot water pipes in Cottage No. 1	2 80
For digging drains for Cottage No. 7	2 00
Lumber, whitening, etc., and painting	267 98
Labor on drains and cesspools	82 00
Paint, asphaltum, tar brushes, and expressing	32 25
Hardware and carpenter work	94 78
Windows, labor, and carpenter work	214 00
Painting, whiting, and glazing	176 00
Galvanized chimney tops	10 75
Total	$1,000 31

Students' Cottages.

For altering, repairing, and furnishing one cottage for the Literary Societies	$353 75
Hardware, asphaltum, and lamps	49 20
Total	$402 95

APPENDIX P.—*Viticultural Fund.*

Salary of Analytical Chemist	$825 00
One microscope of three powers	6 00
Two empty barrels and one medium wine press	20 00
Traveling expenses of F. W. Morse, in phylloxera investigation	91 32
One frame for grape sieve, and brass wire screen	8 00
Ten yards linen crash and two rollers	3 50
Cataloguing viticultural books in San Francisco	7 80
Traveling expenses to Sonoma, Martinez, etc.	10 90
Telegraphing, expressage, and postage	32 83
One still for wine analysis	20 00
Instruments, apparatus, etc.	49 75
Building brick cellar	730 00
Material, hardware, lumber, aud labor	210 84
Window guards, electro cut, stove, demijohns, and shelving	38 69
Salary of Analytical Chemist	600 00
Sixty-four feet sugar pine lumber	5 12
Telegraphing and expressage	9 30
One barrel and keg	1 00
Chemicals	25 90
Traveling expenses of W. G. Klee	3 25
Corks and sulphuric ether	5 15
Gelatine	1 00
Two drying tubes	1 20
One boiling flask	35
Total	$2,706 90

DISBURSEMENTS—Continued.

APPENDIX Q.—*Mineralogical Department.*

Black walnut case for minerals, bookcases, desks, etc.			$3,089 00
Lettering signs			13 00
Plumbing			61 25
Postage stamps			10 00
One analytical scale, two hundred grains	Marks,	300 00	
One set of weights, two hundred grains		38 00	
Packing		18 00	
Custom House charges		11 00	
Exchange on Berlin for	Marks,	367 00	89 92
Freight and insurance on above			10 42
One case for minerals			12 00
One marble washbasin			4 00
Toweling			3 75
Expressage			1 00
One half dozen brushes			1 50
One sixth dozen brushes			75
Two pounds Canada balsam			1 00
Fifty pounds emery			6 25
One pound beeswax			35
One grinding plate			10 00
Three pairs vises			1 50
Four pairs forceps			1 00
Two globe cylinders			4 50
Changing cylinders from four to eight inches			1 50
Five hundred paper tags, 6, 5, ½			7 50
One thousand paper tags, 4½, 4½, ½			12 50
One thousand paper tags, 4, 3½, ½			12 50
One thousand paper tags, 3, 2½, ½			10 00
One hundred walnut rosettes			3 50
Stenciling tables			13 00
One eighteen inch circular bellows			9 00
One large reflection goniometer	Marks,	1,250 00	
One heating attachment		150 00	
One polariscope		620 00	
One large microscope		600 00	
Five small microscopes		1,495 00	
One camera lucida		40 00	
One graduated glass ruler		12 00	
One device for grinding parallel surfaces		18 00	
One mounting stand		18 00	
One thousand microscopic slides		70 00	
One thousand three hundred thin covers		45 00	
Collection of rock sections		408 00	
Collection of optical crystal sections		223 00	
One glass triangle, graduated		12 00	
One glass circle, graduated		12 00	
One grinding and cutting machine		240 00	
One polishing machine		60 00	
One adjustable wooden platform		63 00	
Five packing cases, zinc lined		74 00	
Consul fees, etc.		10 70	
Exchange on Berlin for	Marks,	5,420 70	1,327 33
Freight on above			78 14
Custom House charges			5 60
Expressage			3 50
Postage stamps			10 00
Total			$4,815 26

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APPENDIX R.—*Bacon Library and Art Gallery Building and Furniture.*

Advertising for plans and proposals	$457 60
Printing specifications	18 00
Architect's commissions	2,475 15
Cesspool—additional brick and library moldings	481 00
Two marble slabs	90 00
Extra cement and iron work	935 00
Salary of Superintendent	1,735 72
Paid Robert Mitchell, contractor	47,759 00
Paid C. D. Harvey on account of steam heater	194 00
Fourteen circles—Burnham, Standeford & Co.	4 50
Advertising for proposals for furniture—sundry newspapers	52 50
Architect's commission on furniture designs—J. A. Remer	100 00
Marble mantel—E. McGrath	135 00
One barrel of lime—P. McEvoy	1 25
Paid on account of furniture contract—Schuster & Niehaus	1,500 00
Frescoing and tinting—Massman & Eibach	1,122 00
Balance of Architect's commission on furniture designs—J. A. Remer	100 00
Balance on account of furniture contract—Schuster & Niehaus	1,135 00
Strips in Art Gallery—J. C. Parkinson	45 00
One half dozen candlesticks—Dalziel & Muller	75
One coal shovel—Dalziel & Muller	40
One dozen newspaper files—Cunningham, Curtiss & Welch	6 00
One hatchet—Pierce & Co.	90
One shovel—Pierce & Co.	1 00
Three foot scrapers—Pierce & Co.	75
Removing pictures of H. D. Bacon	75
Gilding Bacon picture frames—J. C. Parkinson	62 50
Expressage on two loads of paintings—Foss Express	5 00
Balance paid on steam heater—C. D. Harvey	1,450 00
Painting iron rails, etc., in Art Gallery—Massman & Eibach	10 00
Changing doors in bookcases, with locks, etc.—Schuster & Niehaus	18 00
Four flush door bolts—W. & M. Everson	4 00
Altering elevator in Art Gallery—R. McKilliken	2 50
Stretching and hanging picture of Washington, etc.—Morris & Kennedy	30 00
Carpets—E. Hook	54 37
Platforms in Art Gallery—E. R. Lord	81 00
Lumber for moving statuary and paintings—Taylor & Co.	27 74
Total	$60,096 38

APPENDIX S.—*Military Department.*

Material for cleaning guns	$3 75
Stationery	6 50
For fifty feet of hose, couplings, and sprinkler	11 75
Repairing drums and tools for armorer	115 13
Lathe, etc., for armorer, bugles, and expressing	149 50
Freight on arms to Benicia	51 00
Freight on arms to and from Sacramento	10 32
Loss of arms paid United States	52 99
Lumber for Armory	9 90
Two sacks of sand	1 30
Record book	80
Paint and brushes	50
Lard oil and can	1 00
Total	$414 44

APPENDIX T.—*University Water Company.*

Police force guarding water supply	$647 00
Costs of suit—University *vs.* Hayward et al.	40 00
Abstract of title	75 00
Labor	17 00
Water pipe	12 05
Total	$791 05

APPENDIX U.—*Physical Laboratory.*

For apparatus	$23 02
Instruments, apparatus, etc.	244 00
Freight, insurance, etc., on same	31 26
Towels	2 60
Freight on apparatus	9 20
Supplies	180 51
Freight on same	41 32
Total	$531 91

STATE OF CALIFORNIA, County of Alameda. } ss.

J. H. C. Bonté, being first duly sworn, deposes and says that he is, and has been, from and since the first day of August, 1881, the duly appointed, qualified, and acting Secretary of the Board of Regents of the University of California; that as such Secretary he is officially charged with the duty of dispensing, and did dispense and pay out all moneys paid out since August 1, 1881, and did also pay out all the sums that have been paid out from the special legislative appropriations under the Appropriation Act of May 12, 1881: "for furnishing Bacon Art and Library Building at the State University;" "for the Mechanical and Mining Art College at the State University;" "for continuing the special investigations of the Agricultural Department of the State University." That a detailed statement of the manner in which the above appropriations have been expended is contained in Appendices "A," "B," "C," and "R," of the foregoing report; that affidavits were furnished from time to time, as warrants were drawn, to the State Board of Examiners (accompanied by detailed statements) to the effect: "That said services were rendered by the persons named at the time mentioned; that said articles were purchased from the parties named for the prices specified at the dates therein set down; and that said accounts respectively were in all respects correct."

J. H. C. BONTÉ.

Subscribed and sworn to before me this seventeenth day of November, 1882, in Berkeley, Alameda County, California.

C. S. MERRILL,
Notary Public.

[SEAL.]

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TRIAL

From the Books of the Regents of the University of

Debit.		Ledger Accounts.	Credit.	
Balances.	Face of Ledger.		Face of Ledger.	Balances.
$26,423 68	$1,574,646 17	Cash Deposits with Treasurer	$1,548,222 49	
812,576 67	899,869 86	Salaries	87,293 19	
38,072 97	40,017 57	Equipment and Repairs	1,944 60	
10,472 23	10,775 08	Fuel, Lights, and Water	302 85	
9,683 94	9,898 59	Advertising and Printing	214 65	
2,885 62	2,968 70	Telegraphing and Expressing	83 08	
2,438 82	2,498 82	Stationery	60 00	
1,128 26	2,242 76	Postage and Revenue Stamps	114 50	
7,967 00	11,507 00	Rent	3,540 00	
1,961 34	2,101 62	Office Expense	140 28	
2,793 09	2,793 09	University Printing Office		
	142,367 19	Land Administration	175,181 74	$32,814 55
6,950 94	7,156 69	Incidental Expenses	205 75	
173,100 10	323,052 70	Bills Receivable	149,952 60	
47,346 74	49,315 50	University Site Improvements	1,968 76	
52,760 95	53,500 34	Agricultural Department	739 39	
3,809 20	7,509 05	University Water Company	3,699 85	
27,226 06	27,226 06	Students' Cottages		
1,592 88	176,590 01	Brayton Property	174,997 13	
	80,882 54	College of California	83,435 00	2,552 46
405,710 57	405,710 57	Building Fund		
148 60	148 60	Tompkins Endowment		
490 83	490 83	Toland Medical College		
2,045 39	2,545 39	Preparatory Department	500 00	
5,499 99	5,499 99	Free Scholarship		
19,157 36	19,396 61	Insurance	239 25	
5,821 91	6,691 16	College Celebrations	869 25	
6,350 17	10,622 67	Official and Lecturing Expenses	4,272 50	
22,450 43	22,671 56	Apparatus	221 13	
5,022 48	5,022 48	Museum		
7,170 71	15,429 11	Laboratory	8,258 40	
29,573 71	29,927 99	Library	354 28	
2,247 74	3,861 37	Contingent Fund	1,613 63	
3,811 57	3,811 77	Military Department	20	
49,487 38	49,715 25	Mechanical Department	227 87	
438,000 00	493,993 80	U. S. Endowment (Investment Land Fund)	55,993 80	
	60,582 91	Interest and Discount	118,031 81	57,448 90
	33,181 10	Land Fund	500,717 48	467,536 38
	1,620 03	Land Interest	246,236 81	244,616 78
	22 00	Fee Fund	10,742 00	10,720 00
2,645 65	2,856 90	Viticultural Fund	211 25	
531 91	531 91	Physical Laboratory		
4,815 26	4,815 26	Mineralogical Department		
	$4,606,068 60	Amounts forward	$3,180,585 52	

BALANCE

California, at Berkeley, California, June 30, 1882.

Debit.		Ledger Accounts.	Credit.	
Balances.	Face of Ledger.		Face of Ledger.	Balances.
	$4,606,068 60	Amounts brought forward	$3,180,585 52	
	48,178 49	Excess Payments	72,813 48	$24,634 99
	400 00	State Fees	407 00	7 00
		University Fund	290,281 00	290,281 00
		State Appropriations	273,928 29	273,928 29
		State Endowment Interest	409,846 36	409,846 36
		Admission and Tuition Fees	2,095 00	2,095 00
	4,034 82	Rent from Students' Cottages	12,642 97	8,608 15
	4,077 52	State Geological Survey	4,417 85	340 33
	3,897 84	U. S. Endowment Interest	126,864 12	122,966 28
		Seminary Land Fund	505 99	505 99
		Seminary Land Fund Interest	1,009 37	1,009 37
		Forfeited Seminary Land Principal	2,480 00	2,480 00
		Forfeited Seminary Land Interest	1,097 22	1,097 22
		Forfeited Seminary Land Fees	19 00	19 00
		Audited Demands on Controller	339,895 70	339,895 70
		D. O. Mills' Endowment	78,013 35	78,013 35
		Agassiz Professorship of Oriental Languages	1,705 64	1,705 64
	1,260 50	Medal Fund (Donation)	4,186 27	2,925 77
	648 88	Engineering Department Fund (Donation)	747 06	98 18
17,460 58	57,456 03	San Francisco Savings Union	39,995 45	
24,401 53	37,739 47	Security Savings Bank	13,337 94	
	43,387 12	Land Agent of University	43,396 79	9 67
24,745 97	54,527 46	Union Savings Bank, Oakland	29,781 49	
		M. Reese Library Fund	50,000 00	50,000 00
		M. Reese Library Fund Interest	12,019 43	12,019 43
20,150 00	20,150 00	Seminary Land Fund Investment		
	349 20	Seminary Land Fund Interest	6,437 45	6,088 25
42,383 33	42,383 33	Brayton Real Estate Fund		
	1,044 61	Brayton Real Estate Fund Interest	8,475 48	7,430 87
5,125 00	6,520 15	Oakland Bank of Savings, Oakland	1,395 15	
		A. D. Bacon (Donation)	25,000 00	25,000 00
23,937 16	23,937 16	Land Administration Fund		
	235 15	Land Administration Fund Interest	1,633 20	1,398 05
	4,745 00	Diverted Fund Interest	9,570 00	4,825 00
	1,108 75	F. L. A. Pioche (Donation)	2,500 00	1,391 25
		Forfeited Public Building Land Fund	320 00	320 00
		Forfeited Public Building Land Interest	37 33	37 33
60,096 38	60,096 38	Bacon Library and Art Gallery Building		
23,600 00	23,600 00	Special Investment Fund		
1,594 44	1,594 44	Special Investment Fund Interest		
	$5,047,440 90		$5,047,440 90	

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STATEMENT OF CASH ASSETS AND LIABILITIES,

For the Fiscal Year ending June 30, 1882.

ASSETS.		
Cash deposited with Treasurer, D. O. Mills	$26,423 68	
Cash Advances.		
Account of excess payments	9,527 50	
Account of Agricultural Department, awaiting receipt of State appropriation	1,750 89	
Account of Bacon Library and Art Gallery building, awaiting receipt of State appropriation	1,753 66	
Account of Special Investment Fund, $20,000 Merced County bonds, at 18 per cent. premium	23,600 00	
Account of advance of accrued interest on above bonds	1,594 44	
Account of Land Administration Fund, in purchase of bonds	895 69	
Account of Brayton Real Estate Fund interest—for accrued interest	719 44	
Account of Reese Library Contingent Fund	250 00	
Cash Deposits.		
With Security Savings Bank	23,162 50	
With San Francisco Savings Union	12,500 00	
With Oakland Bank of Savings	5,000 00	
With Union Savings Bank of Oakland	18,500 00	
Total cash assets		$125,677 80
LIABILITIES.		
Amount due United States for excess of $1 25 per acre on double minimum land	$24,634 99	
Amount due Mechanical and Mining Departments	10,203 26	
Amount due Land Fund—awaiting investment in bonds	16,400 39	
Amount due Land Administration	25,585 59	
Amount due Brayton Real Estate Fund—awaiting investment in bonds	3,785 07	
Amount due D. O. Mills Endowment—interest	3,013 35	
Amount due Michael Reese Library Fund—interest	5,777 72	
Amount due Viticultural Fund	354 35	
Amount due Mineralogical Department	184 74	
Amount due State Fees	7 00	
Amount due State Geological Survey	340 33	
Amount due Seminary Land Fund	505 99	
Amount due Forfeited Seminary Land Fund	2,480 00	
Amount due F. L. A. Pioche Donation	1,391 25	
Unpaid bills	483 45	
Total cash liabilities		95,147 48
Excess of assets over liabilities		$30,530 32

THE UNIVERSITY MEDAL FUND.

Deposited with the Union Savings Bank, Oakland, California.

Dr.			Cr.		
1874.			1873.		
July 30	To cash—Medal to F. Otis	$125 00	Mar. 13	By donations	$2,383 68
			June 30	By interest	56 05
Oct. 10	To cash—Medal to J. M. Whitworth	125 00	Dec. 31	By interest	121 48
			1874.		
Oct. 10	To cash—Medal to F. H. Whitworth	125 00	June 30	By interest	126 99
			Dec. 31	By interest	115 79
1875.			1875.		
July 16	To cash—Medal to T. F. Barry	125 00	June 30	By interest	114 41
			Dec. 31	By interest	114 86
1876.			1876.		
Nov. 30	To cash—Medal to D. B. Huntly	125 00	June 30	By interest	119 37
			1877.		
Nov. 30	To cash—Medal to F. L. Button	125 00	Jan. 31	By interest	115 13
			July 30	By interest	112 40
1878.			1878.		
Oct. 31	To cash — Medal to Theodore Gray	125 00	Jan. 31	By interest	106 46
			July 31	By interest	103 74
Oct. 31	To cash—Medal to Jos. Hutchinson	128 50	1879.		
			Jan. 31	By interest	98 59
1879.			July 31	By interest	100 04
Aug. —	To cash—Medal to Fremont Morse	128 50	1880.		
			Jan. 31	By interest	92 96
1880.			July 31	By interest	81 98
July 31	To cash — Medal for Mary Hawley	128 50	1881.		
			Jan. 31	By interest	80 65
			July 31	By interest	70 63
1882.			1882.		
June 30	To balance	2,925 77	Jan. 30	By interest	71 06
		$4,186 27			$4,186 27
			June 30	By balance	$2,925 77

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THE AGASSIZ PROFESSORSHIP FUND.

Dr. *Deposited with the Union Savings Bank, Oakland, California.* Cr.

			1873.		
			March 13.	By cash from rent	$100 00
			June 30	By interest	2 25
			Dec. 31	By interest	5 05
			1874.		
			June 30	By interest	6 08
			Aug. 19	By cash from rent	100 00
			Nov. 14	By cash from rent	100 00
			Dec. 31	By interest	9 27
			1875.		
			June 30	By interest	15 22
			Dec. 11	By cash from rent	125 00
			1876.		
			June 30	By interest	22 60
			Dec. 18	By rent	125 00
			1877.		
			June 30	By interest	68 53
			1878.		
			Jan. 31	By interest	28 64
			Mar. 31	By rent	125 00
			July 31	By interest	30 60
			1879.		
			Jan. 31	By interest	32 57
			May 31	By rent	125 00
			July 31	By interest	34 14
			1880.		
			Jan. 31	By interest	36 69
			June 30	By rent	125 00
			July 31	By interest	32 55
			1881.		
			Jan. 31	By interest	37 28
			July 31	By interest	32 63
			July 31	By rent	175 00
			1882.		
			Jan. 31	By interest	36 45
			Jan. 31	By rent	175 00
1882. June 30	To balance	$1,705 64			
		$1,705 64			$1,705 64
			June 30	By balance	$1,705 64

SEMINARY LAND INVESTMENT FUND.

Investment in Bonds, from January 31, 1877, to June 30, 1882. Deposited with State Treasurer.

Date of Purchase.	DESCRIPTION OF BONDS.	Number of Bonds	Denomination.	Par Value.	Rate of Purchase	Amount paid for Bonds.	Rate of Interest—per ct.	Amount of Annual Interest.
1877. Jan. 31	City and County of San Francisco—Funded debt of 1858; mature January 1, 1888	7	$1,000 00	$7,000 00	102	$7,140 00	6	$420 00
1880. April 5	San Luis Obispo County Bonds—Mature June 30, 1882	80	100 00	8,000 00	106¼	8,520 00	10	800 00
1881. June 5	Fresno County—Road and Bridge Bonds	8	500 00	4,000 00	106¼	4,260 00	7	280 00
	Totals			$19,000 00		$19,920 00		$1,500 00

NOTE.—The San Luis Obispo and Fresno County bonds were purchased to replace redeemed City and County of San Francisco bonds, funded debt of 1858, of the par value of $12,000.

LAND ADMINISTRATION FUND.

Investment in Bonds Deposited with State Treasurer.

Date of Purchase.	DESCRIPTION OF BONDS.	No. of Bonds	Denomination.	Par Value.	Rate of Purchase	Amount paid for Bonds.	Rate of Interest—per ct.	Amount of Annual Interest.
1881. July 15	Kern County Bonds—Mature November 1, 1900	13	$1,000 00	$13,000 00	107 7/16	$14,014 66	7	$910 00
July 22	Sonoma County Bonds—Mature July 1, 1901	9	1,000 00	9,000 00	110¼	9,922 50	6	540 00
	Totals			$22,000 00		$23,937 16		$1,450 00

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INVESTMENT OF LAND FUND IN BONDS.

For account of United States Endowment of 150,000 acres, from March 15, 1875, to June 30, 1882.

Date of Purchase.	DESCRIPTION OF BONDS.	Number of Bonds.	Denomination.	Par Value.	Rate of Purchase.	Amount paid for Bonds.	Rate of Interest—per ct.	Amount of Annual Interest.
1875.								
March 15	State of California—Funded debt of 1873; mature January 2, 1893	24	$1,000 00	$24,000 00	98½	$23,640 00	6	$1,440 00
March 31	State of California—Funded debt of 1873; matures January 2, 1893	1	116,000 00	116,000 00	par	116,000 00	* 6	6,960 00
Dec. 8	City and County of San Francisco—Funded debt of 1858; matures January 1, 1888	1	1,000 00	1,000 00	par	1,000 00	6	60 00
Dec. 8	City and County of San Francisco—City Hall Construction; mature July 1, 1899	4	500 00	2,000 00	92	1,840 00	6	120 00
1876.								
March 15	City of Oakland Sewer Bonds—Mature June 1, 1885	13	1,000 00	13,000 00	98½	12,805 00	8	1,040 00
March 15	City and County of San Francisco—Montgomery Avenue; mature January 1, 1903	22	1,000 00	22,000 00	86½	19,030 00	6	1,320 00
March 15	State of California—Funded debt of 1873	1	1,000 00	1,000 00	par	1,000 00	6	60 00
June 17	City and County of San Francisco—School Bonds; mature July 1, 1894	10	1,000 00	10,000 00	97½	9,750 00	6	600 00
Sept. 13	City and County of San Francisco—School Bonds; mature July 1, 1894	20	1,000 00	20,000 00	99½	19,900 00	6	1,200 00
Sept. 13	City and County of San Francisco—City Hall Construction; mature July 1, 1899	2	500 00	1,000 00	96½	965 00	6	60 00
1877.								
March 8	City and County of San Francisco—City Hall Construction; mature July 1, 1899	4	500 00	2,000 00	98	1,960 00	6	120 00
June 7	City and County of San Francisco—So-called Slip Bonds; mature October 1, 1883	16	500 00	8,000 00	107½	8,600 00	7	560 00
June 7	City and County of San Francisco—Park Improvement; matures April 1, 1904	1	1,000 00	1,000 00	103	1,030 00	6	60 00
Dec. 31	City and County of San Francisco—Funded debt of 1858; matures January 1, 1888	1	1,000 00	1,000 00	103	1,030 00	6	60 00
Dec. 31	City and County of San Francisco—Funded debt of 1858; matures January 1, 1888	1	1,000 00	1,000 00	par	1,000 00	6	60 00
1878.								
Jan. 17	City and County of Santa Clara—Mature July 1, 1890	6	500 00	3,000 00	108	3,240 00	7	210 00
Jan. 31	City and County of San Francisco—Dupont Street Bonds	40	1,000 00	40,000 00	90	36,000 00	7	2,800 00
	City and County of San Francisco—So-called Slip Bonds; mature October 1, 1883	7	1,000 00	7,000 00	107½	7,525 00	7	490 00
		1	500 00	500 00	107½	537 50	7	35 00

March 5	City and County of San Francisco—Park and Avenue Improvement; mature January 1, 1898	12	1,000 00	12,000 00	105*	12,472 00	6	720 00
May 14	City and County of San Francisco—Park and Avenue Improvement; mature January 1, 1898	11	1,000 00	11,000 00	104	11,440 00	6	660 00
Sept 11	Town of Alameda—School Bonds; mature September 4, 1898	20	500 00	10,000 00	102 3/10	10,203 00	6	600 00
1879.								
Feb. 10	City and County of San Francisco—Park and Avenue Improvement; mature January 1, 1898	16	1,000 00	16,000 00	105	16,709 34	6	960 00
Feb. 10	Santa Clara—W. P. Railroad; mature August and October, 1885	10	1,000 00	10,000 00	105½	10,550 00	7	700 00
1880.								
Jan. 15	San Luis Obispo County Bonds—Mature June 30, 1882	80	100 00	8,000 00	110¼	8,820 00	10	800 00
April 5	San Luis Obispo County Bonds—Mature June 30, 1882	20	100 00	2,000 00	106½	2,130 00	10	200 00
April 5	San Luis Obispo County Bonds—Mature June 30, 1882	10	100 00	1,000 00	106½	1,065 00	10	100 00
1881.								
Feb. 15	Kern County Bonds—Mature November 1, 1900	22	1,000 00	22,000 00	107 7/10	23,716 00	7	1,540 00
June 13	Fresno County—Road and Bridge Bonds	17	500 00	8,500 00	106¼	9,031 25	7	595 00
July 22	Sonoma County Bonds—Mature July 1, 1901	32	1,000 00	32,000 00	110¼	35,280 00	6	1,920 00
Sept. 8	San Joaquin County Bonds—Mature August, 1885, and April, 1886	20	1,000 00	20,000 00	110¼	22,399 30	8	1,600 00
1882.								
Feb 4	Plumas County Bonds—Mature October 3, 1901; Replacing $12,000 Yuba Bonds, redeemed	12	1,000 00	12,000 00	105	12,600 00	6	720 00
	Totals			$438,000 00		$443,000 00		$28,370 00

* Flat—(Less accrued interest).

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INVESTMENT OF BRAYTON PROPERTY FUND IN BONDS.

From October 12, 1877, to June 30, 1881. Deposited with State Treasurer.

Date of Purchase.	Description of Bonds.	Number of Bonds.	Denomination.	Par Value.	Rate of Purchase	Amount paid for Bonds.	Rate of Interest—per cent.	Amount of Annual Interest.
1877. Oct. 12	City and County of San Francisco—Funded debt of 1858; mature January 1, 1888	14	$1,000 00	$14,000 00	102	$14,262 50	6	$840 00
Oct. 12	City and County of San Francisco—So-called Slip Bonds; mature October 18, 1883	9	500 00	4,500 00	107½	4,837 50	7	315 00
1878. May 14	City and County of San Francisco—Park Improvement Bonds; mature January 1, 1898	1	1,000 00	1,000 00	104	1,040 00	6	60 00
1879. Feb. 10	City and County of San Francisco—Park and Avenue Improvement Bonds; mature January 1, 1898	10	1,000 00	10,000 00	105*	10,443 33	6	600 00
1881. Oct. 7	Merced County Bonds; mature June 20, 1894	20	500 00	10,000 00	118	11,800 00	10	1,000 00
	Totals			$39,500 00	-----	$42,383 33	----	$2,315 00

* Flat—(Less accrued interest)

REPORT OF THE LAND AGENT OF THE UNIVERSITY OF CALIFORNIA.

LAND OFFICE OF THE UNIVERSITY,
SAN FRANCISCO, June 30, 1882.

To W. T. Reid, President of the University of California:

SIR: The transactions of the Land Department of the University for the fiscal year ending June 30, 1882; also, statements of total cash sales of the grant, deferred payments due, and number of acres located, is herewith respectfully submitted:

Receipts for the fiscal year ending June 30, 1882.	
From sales of the Agricultural Grant of 150,000 acres	$20,538 06
From collections of $1 25 per acre due the United States for double minimum lands	4,879 63
From interest on deferred payments due Agricultural Grant	13,908 61
From sales of forfeited Seminary lands	400 00
From interest on deferred payments due forfeited Seminary lands	102 40
From fees for certificate of purchase, forfeited Seminary lands	3 00
From fees for applications, certificates of purchase, and patents	427 00
From State tax due the State of California for affixing the seal of State to patents	114 00
Total receipts	$40,372 70
Number of acres for which certificates of purchase have been issued	1,146.84
Number of acres for which patents have been issued for minimum land	6,004.01
Number of acres for which patents have been issued for double minimum land	3,349.45
Delinquencies of Payments.	
On approvals	$5,477 47
Delinquent interest on certificates of purchase	10,940 06
Total	$16,417 53

TOTAL SALES OF THE AGRICULTURAL GRANT OF 150,000 ACRES, FROM APRIL 19, 1869, TO JUNE 30, 1882, INCLUSIVE.

	Number of Acres.	Land Principal.
Sales of land at $6 25 per acre, payment in full	33,274.14	$166,697 28
Sales of land at $5 00 per acre, payment in full	36,854.60	181,226 45
Sales of land at $5 00 per acre, 20 per cent. of principal paid	37,155.40	37,155 40
Installments of principal paid on $5 00 land on which 20 per cent. was paid	----------	47,524 43
Sales of lands at $6 25 per acre, 20 per cent. of principal and excess paid	936.64	936 64
Sales of lands at $6 25 per acre, 20 per cent. of principal and full excess paid	24,074.49	24,074 49
Installments paid on land principal of same	----------	9,441 69
Forfeiture of deposit of 20 per cent. by applicant for 200 acres	----------	200 00
Totals	132,295.27	$467,536 38

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STATEMENT OF PATENTS ISSUED

By the University of California, June 30, 1882.

Date of Patent.	Number of Patent.	Number of Location.	Name of Patentee.	Minimum Land.	Double Minimum Land.
1872.					
Apr. 29	1	201	Isaac Friedlander	2,720.00	
Dec. 30	2	48	H. H. Warburton	80.00	
Dec. 30	3	48	Newton J. D. Shartzer	120.00	
1873.					
Jan. 7	4	287½	W. W. Hayes, H. Loobliner, and W. R. Palmer, Trustees of Chorro Lodge, No. 168, I. O. O. F.	40.00	
Jan. 7	5	190	Joseph M. Wood	321.90	
Apr. 21	6	296	L. D. Latimer	40.00	
1874.					
Aug. 5	7	104	F. C. Davis	160.00	
Aug. 5	8	560	Albert Dibble	40.00	
Aug. 5	9	22	Joseph Naphtaly	640.00	
Sept. 22	10	313	Martin A. Britton	231.65	
Sept. 28	11	179	Patrick Nolan	160.00	
Sept. 28	12	180	Patrick Nolan	160.00	
Sept. 28	13	302	Patrick Nolan	160.00	
Oct. 10	14	862	Joseph A. Carrie	76.60	
Oct. 19	15	792	Charles A. Perkins	40.00	
Nov. 28	16	343	Jacob McKissick	80.00	
Dec. 28	17	374	J. W. Haverstick	160.00	
1875.					
Jan. 7	18	883	David N. Sherburn	160.00	
Jan. 4	19	408	Charles Camden and Wm. Magee		360.00
Jan. 7	20	532	John Ellis and Erastus Wagoner		80.00
Jan. 16	21	181	Elkan Wasserman	160.00	
Jan. 19	23	539, 637, 639, 40, 41, 42	R. G. Byxbee	360.00	
Feb. 3	24	392	Frederic Clay	280.00	
Jan. 23	25	602	Charles P. Potter	40.00	
Jan. 26	26	868	A. J. Forrister	40.00	
Feb. 10	27	1110	R. G. Flint	40.00	
Mar. 9	28	1122	J. P. Andrews	40.00	
Apr. 22	29	625, 892	Mendocino Lumber Company	400.00	
May 11	30	332	Winford S. Whitaker	40.00	
July 19	31	344	Jefferson Walker	640.00	
Aug. 3	32	520	Lindsey Carson	40.00	
Aug. 3	33	1208	Christopher Nelson	40.00	
Aug. 16	34	521, 523	Lindsey Carson	200.00	
Sept. 24	35	667	W. H. Rogers		54.51
Nov. 2	36	298	Andrew Gehringer	219.39	
1876.					
Feb. 2	37	184	Stephen G. Little	160.00	
Feb. 2	38	575	Isaac Rambo	40.00	
Feb. 2	39	103	Lewis Tryon	160.00	
Feb. 19	40	952	Albert Dibble	155.74	
Apr. 14	41	671	Elon W. Root		40.00
June 24	42	136	August Hemme	40.00	
June 24	43	579	W. W. Hayes	42.00	
June 24	44	1294	Silas Coombs	40.00	
Aug. 26	45	678	Hosea H. Johnson	80.00	
Sept. 7	46	638	Robert G. Byxbee	40.00	
Oct. 20	47	542	A. B. Forbes	80.00	
Dec. 27	48	382	W. McReynolds	160.00	
1877.					
Jan. 5	49	353	S. A. Gyle	40.00	
Feb. 19	50	1173	R. E. Jacks	40.00	
Apr. 16	51	840	Archilles S. Hicks	40.00	
Aug. 13	52	1041	John T. Harrington		76.26
Aug. 13	53	291	John Hienlan		40.00
Aug. 13	54	388	F. R. Farman		123.65

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	Number of Patent.	Number of Location.	Name of Patentee.	Minimum Land.	Double Minimum Land.
Aug. 15	55	265	C. D. Robinson	40.00	
Oct. 27	56	438	Alexander Ash		40.00
Oct. 27	57	451	A. S. C. Cleek		40.00
Nov. 12	58	169	B. B. Redding		160.00
Dec. 18	59	282	William T. Coleman	40.00	
1878.					
Jan. 18	60	881	S. C. Stovall, assignee	160.00	
Jan. 18	62	1040	William T. Garrett	40.00	
Jan. 18	63	1270	George C. Berry	40.00	
Jan. 31	64	964	J. W. Johns	40.00	
Jan. 31	65	310, 333	L. W., J. C., and J. L. Harl	440.00	
Jan. 31	66	1360	George C. Berry	80.00	
Feb. 4	67	1142	S. C. Stovall, assignee	120.00	
Feb. 4	68	334, 362	Francis Boardman	200.00	
Feb. 4	69	243, 240, 241	William T. Coleman, assignee of John P. Nelson		657.49
Feb. 4	70	239	William T. Coleman		320.00
Feb. 6	71	1202, 1203, 1204	Commercial and Savings Bank of San José, assignee of Mark Howell	2,000.00	
Feb. 9	73	1089, 1090, 1091, 1092, 1093, 1095, 1097, 1098, 1099, 1094, 1096, 1126, 1127, 1128	James B. Haggin, assignee	1,530.00	4,230.66
Feb. 25	75	1278, 1281	E. J. Baldwin		546.91
Mar. 18	76	1136	Joseph Russ	400.00	
Apr. 6	77	1177	R. E. Jack	40.00	
Apr. 15	78	1368	Richard S. Floyd et al., Trustees of the James Lick Trust	191.49	
Apr. 18	79	1239	Robert Tait	40.00	
Apr. 24	80	373	J. J. Chandon, assignee of J. W. Brim	80.00	
Apr. 24	81	652	Joseph J. Chandon	40.00	
May 21	82	1109	Edward Kruse, assignee	60.43	
June 17	83	390	Lydia M. Carter	160.00	
July 11	84	279, 285	Thomas J. Price		274.12
Aug. 21	85	318	Peter Murray, assignee	80.00	
Aug. 21	86	1318	Joseph Getz	40.00	
Aug. 29	87	984, 985	O. W. Merriam, by virtue of a certain Sheriff's deed, dated Jan. 11, 1878	280.00	
Aug. 29	88	1359	O. W. Merriam, by virtue of a deed signed by Amelia Burrage, adm'x	82.32	
Oct. 26	89	91	Charles Wood	160.00	
Oct. 26	90	1395	Theodore Leroy	40.00	
Oct. 30	91	365	Alfred F. Green	240.00	
1879.					
Jan. 2	92	926	Mark Hubbard, assignee	40.00	
Jan. 2	93	389	John Murphy		80.00
Feb. 18	94	1137	Joseph Russ	40.00	
Feb. 18	95	1039	H. J. Holmes	80.00	
Mar. 12	96	564	James Turnstead	40.00	
Mar. 12	97	1009	Ann Alexander, assignee	40.00	
Mar. 12	98	385, 386	Stephen Rees	160.00	
Mar. 18	99	356	Jackson Hart, assignee	80.00	
May 29	100	618	Thomas Newell, assignee		320.00
June 6	101	1325	August Hemme	40.00	
June 6	102	295	B. F. Langford		40.00
June 6	103	769	Richard T. Pope		78.83
June 6	104	891, 972, 973	M. Brandenstein		520.50
June 6	105	692	Deming Gibbons		40.00
June 6	106	782, 672, 1168, 1168½	John Touhy		360.00
July 1	107	525	L. Godchaux		320.00
July 1	108	1283	Edward McDonough		40.00
July 1	109	355	Samuel Danville		160.00
July 1	110	369	David H. Allen		40.00
July 1	111	410	D. N. Friesleben		36.82

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STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	Number of Patent.	Number of Location.	Name of Patentee.	Minimum Land.	Double Minimum Land.
1879.					
July 1	112	418,511	G. W. Murdock		240.00
July 1	113	422	Thomas J. Kirkpatrick		480.00
July 1	114	433	Cynthia E. Sanborn		40.90
July 1	115	437	M. A. Reager		80.00
July 1	116	488	C. B. Ashurst		48.00
July 1	117	500	Thomas M. McClanahan		80.00
July 1	118	501, 709, 503, 507, 508	Wm. B. Parker & Francis Houghton		1,536.67
July 1	119	529	F. R. Lofton, assignee of Eli Hacker		80.00
July 1	120	582	E. R. Lowe, assignee of G. W. Hiatt		35.89
July 1	121	590, 591	Richard M. Sparks		80.00
July 1	122	924	James L. Wiebur		80.00
July 1	123	1014	C. P. Berry		80.00
July 1	124	1035	James H. Street		80.00
July 1	125	1141	John Finnell, assignee of J. Finnell		80.00
July 1	126	1474	G. G. Briggs		160.00
July 1	127	616	Edward Hallett		7.40
July 2	128	192, 194	Thompson, Patchett & Grierson, Trustees, etc.	321.25	
July 2	129	588	Thompson, Patchett & Grierson, Trustees, etc.	40.00	
July 31	130	653	John F. Herrick	80.00	
Aug. 7	131	1404	W. J. Hildreth	81.32	
Aug. 7	132	986	Jas. Neylan, assignee of W. H. Bias	80.00	
Aug 13	133	513, 690	C. Burrell, assignee of F. Hutchinson	80.00	
Sept. 2	134	610	Wm. Leviston, assignee B. H. Brooks	38.45	
Sept. 19	135	1282	Miller & Lux, assignees	120.00	
Oct. 18	136	245	W. T. Coleman, assignee of L. D. Simpson		160.00
Oct. 21	137	1214, 1291	John M. Neville		111.10
Oct. 21	138	251	H. Block, assignee of C. G. Bockius		40.00
Oct. 21	139	824	J. H. Logan	160.00	
Oct. 21	140	592, 793, 794	Gardiner, Pugh & Haddick, assignees of E. Bevan	160.00	
Oct. 21	141	1449	Mrs. Allie M. Pearson, assignee of George H. Perrin		80.00
1880.					
Jan. 17	142	770	A. L. Huyck		40.00
Jan. 17	143	597	William McKee		12.22
Jan. 17	144	535	John Sites	40.00	
Jan. 17	145	581, 907	Julius Weyand	160.00	
Jan. 17	146	1383	Frederick Bohn	40.00	
Jan. 17	147	522	L. Carson, assignee of W. W. Johnston	80.00	
Jan. 17	148	1111	Jeremiah Morgan		40.00
Jan. 17	149	1151½	Santa Clara Valley Mill and Lumber Company, assignees		40.00
Jan. 17	150	1373	Matthew, Aaron, and Abraham Kiser, assignees	34.21	
Jan. 17	151	841, 646, 1002, 1003, 595	Santa Clara Valley Mill and Lumber Company, assignees		402.46
Jan. 23	152	307	Charles S. Lohse	47.41	
Jan. 24	153	372	James Lydon	40.00	
Feb. 9	154	1129	E. L. Bradley		160.00
Feb. 9	155	445	Ambrose Lyall		160.00
Feb. 9	156	414	R. McEnespy	10.32	
Feb. 19	157	1370, 1377	Higgins & Collins, assignees	160.00	
Aug. 23	158	833	M. Brandenstein, assignee of John Cook		50.86
Aug. 23	159	1181	Alexander Robertson	40.00	
Aug. 23	160	757	Geo. E. Long, assignee of F. P. F. Temple		94.09
Aug 23	161	748	Jay Burnap, assignee of Hy. M. Mitchell		160.00

STATEMENTS OF PATENTS ISSUED—Continued.

Date of Patent.	Number of Patent.	Number of Location.	Name of Patentee.	Minimum Land.	Double Minimum Land.
1880.					
Aug. 23	162	1332, 1333, 1335, 1336	Lewis Garvey & Edward S. Ames	2,080.00	
Aug. 23	163	3 (Seminary)	Francis L. Whitney	320.00	
Sept. 4	164	548, 549	Sarah Margaret Simpson	240.00	
Sept. 4	165	1462	Simon B. Pulliam	40.00	
Oct. 9	166	1326	Geo. C. Berry	80.00	
Nov. 13	167	1016, 1016½	James W. Kaseburg		80.00
Nov. 13	168	1385	Joseph Thompson		27.98
Nov. 13	169	406, 407	Henry C. Wilson		429.40
Nov. 13	170	541	P. M. Clayhorn		320.80
Nov. 13	171	593	David Robertson		40.00
Nov. 13	172	246	The Pacific Mutual Life Insurance Company of California, assignee of Charles G. Bockius		40.00
Nov. 13	173	605	Philip Hefner		80.00
1881.					
Jan. 17	174	493	H. S. Graves		182.00
Jan. 17	175	515	H. S. Graves		80.00
Jan. 17	176	492	H. S. Graves		80.00
Jan. 17	177	491	H. S. Graves		80.00
Jan. 17	178	544	H. S. Graves		67.76
Jan. 17	179	551	H. S. Graves		240.00
Jan. 17	180	546	H. S. Graves		80.00
Jan. 17	181	512	J. L. Wilbur		240.00
Jan. 17	182	554	J. L. Wilbur		
Feb. 10	183	1393	Jerome Lincoln, assignee of Swen Alstrom	40.00	
Feb. 10	184	1480	Gualala Mill Company, assignee of Benj. F. Warren	40.00	
Feb. 10	185	1382	Clear Lake Waterworks, assignee of John Bensley	159.71	
Feb. 17	186	1311	Calvin S. Kelley	40.00	
Feb. 17	187	1463	Horatio P. Livermore	40.00	
Feb. 17	188	1194, 1195, 1196	Geo. T. Hawley, assignee of Wm. H. Van Arsdale	720.00	
Feb. 17	189	1193	Geo. T. Hawley, assignee of Wm. H. Van Arsdale	640.00	
Feb. 24	190	1374	Thomas Mathews	40.00	
Mar. 5	191	1481	Thomas Lynch	40.00	
Mar. 5	192	1367	Robert G. Byxbee	285.27	
Mar. 12	193	1470, 1471	Calvin S. Kelley & David L. Farnsworth, assignees of Robert Shearer	120.00	
Mar. 12	194	953	John W. Potts, assignee of L. Brooks	80.00	
Mar. 12	195	966, 967	E. H. Duncan, assignee of Louis Harbers	120.00	
Mar. 17	196	1438	William P. English	48.21	
Mar. 17	197	608	Lauchlin McDonald	80.00	
Mar. 24	198	858, 1006	Henry Hutchinson, assignee of Salena G. Truitt	366.33	
Mar. 28	199	798	Isaac A. Cooper		22.32
Mar. 28	200	725	Henry Miller and C. Lux, assignees of Martin Luther and J. Luther		159.25
Mar. 28	201	1272, 1273, 1274, 1275, 1276, 1277	Miller & Lux, assignees of Chas. Lux		588.62
Mar. 28	202	1287	Miller & Lux, assignees of Chas. Lux		47.69
Mar. 29	203	950	Jeremiah Rees		52.15
Apr. 7	204	1338	N. W. Chittenden		47.09
Apr. 7	205	1358	Hiram Briggs	40.00	
Apr. 7	206	1413	James H. Laughlin	80.00	
Apr. 7	207	1433, 1434	Hiram Briggs	80.00	
Apr. 15	208	1102	Connolly Corm, assignee of Duncan McNeill	40.00	
Apr. 16	209	575	Isaac Rambo		80.00
Apr. 19	210	394	John D. Rosenberger		40.00

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STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	Number of Patent.	Number of Location.	Name of Patentee.	Minimum Land.	Double Minimum Land.
1881.					
Apr. 27	211	360	Thomas and Patrick Kelly, assignees of Samuel B. Martin		25.60
May 7	212	550	J. A. Blasingame, assignee of W. T. Cole	160.00	
May 12	213	706	Robert Gordon		40.00
May 14	215	1424, 1446	J. C. Stovall	240.31	
May 14	216	879	Henderson Brown		160.00
May 14	217	336	Warren Bryant, assignee of Jurgen Christensen		40.00
May 14	219	1314	Peter Turner		40.00
May 14	220	1144	William Camron		120.00
May 14	221	339	José G. Sanchez		40.00
May 14	222	1139	E. J. Breen		120.00
May 14	223	1315, 1317	Thomas Turner		80.00
May 21	224	1008	William A. Brown	80.00	
May 27	225	768	Frank McCoppin, assignee of Thos. C. Van Ness	40.00	
June 10	226	1340	L. Peres		11.60
June 21	227	1000, 1390, 1445, 1151¼	Santa Clara Valley Mill and Lumber Company, assignee of William P. Dougherty and J. M. Wood	320.00	
June 22	228	648, 759½, 760½, 761½, 762	Pacific Lumber Company, assignee of Mary E. Butterworth	640.00	
June 22	229	223, 223½, 225, 226, 229, 230, 232, 235	Pacific Lumber Company, assignee of Mary E. Butterworth	2,367.40	
June 22	230	231, 233	Pacific Lumber Company, assignee of Mary E. Butterworth	2,172.87	
June 22	231	334, 237	Pacific Lumber Company, assignee of Mary E. Butterworth	1,008.77	
June 22	232	1375	S. W. Knowles	40.00	
June 30	233	317	John Green	40.00	
June 30	234	1440, 1483, 1484	J. C. Stovall	120.00	
June 30	235	577, 578	E. Archer, assignee of W. C. Archer	80.00	
July 1	236	944, 946	Peter C. Van Allen		80.00
July 11	237	228	Pacific Lumber Company, assignee of Mary E. Butterworth	638.18	
July 12	238	994, 997	Milton Mining and Water Company, assignee of S. F. Butterworth	480.00	
July 12	239	996, 996½, 998, 998½	North Bloomfield Gravel Mining Company, assignee of S. F. Butterworth	960.00	
July 16	240	1407	James B. Haggin, assignee of Horatio P. Livermore		121.40
July 20	241	624	S. W. Randle, assignee of L. F. Moulton		40.00
July 20	242	494	Marshall N. Bryan		160.00
July 20	243	684	Marshall N. Bryan		160.00
July 20	244	651	Cynthia E. Sanborn		40.00
July 20	245	679	Jacob W. Babcock		159.81
July 20	246	565, 566, 567	W. W. Durham		116.91
Aug. 16	247	198, 199	Benjamin M. Hartshorn	960.00	
Aug. 16	248	902	Valentine Gant		80.00
Aug. 26	249	224	Pacific Lumber Company, assignee of Mary E. Butterworth	613.06	
Sept. 14	250	92	James Ripperdam	160.00	
Sept. 14	251	1452	James M. Lea	40.00	
Sept. 17	252	427	Jasper Harrell		110.00
Sept. 28	253	1307	Joseph Korbel	40.00	

STATEMENT OF PATENTS ISSUED—Continued.

Date of Patent.	Number of patent.	Number of Location.	Name of Patentee.	Minimum Land.	Double Minimum Land.
1881.					
Oct. 12	254	930	E. C. Dunning, assignee of Owen Wright		80.00
Oct. 12	255	1230	J. Murrieta, assignee of R. de Clairmont	80.00	
Oct. 19	256	1388, 1389	P. N. Emerson	80.00	
Nov. 2	257	452	Frederick Tarke		160.00
Dec. 17	258	1178	John H. Wise and Thomas Dunigan, assignees of Joseph Carter	40.00	
Dec. 17	259	670, 685, 686,			
1882.		687	Thomas N. Howell		325.20
Jan. 13	260	221	George A. Lamont, assignee of J. M. Wood	79.69	
Jan. 21	261	1479	John F. Todd and Robert Gibson, assignees of J. W. Heald	39.54	
Jan. 21	262	1223	Heirs of G. W. Owen, deceased	80.00	
Jan. 21	263	711	Heirs of James P. S. Smith, deceased	33.30	
Jan. 21	264	767	H. C. Wilson		711.78
Jan. 26	265	906	J. H. McNee, assignee of W. W. Johnston	127.51	
Feb. 10	266	1348	Joseph Korbel, assignee of C. C. Hunger	40.00	
Feb. 16	267	1075, 1076, 1078	J. H. Logan		120.00
Feb. 16	268	1072	W. F. Peabody		80.00
Feb. 17	269	1026	Edmund Jones		40.00
Feb. 28	270	1293	John D. Rosenberger	40.93	
Mar. 9	271	264	J. A. Staller, assignee of Seth Morton	12.23	
Mar. 16	272	172	L. Lamberton	640.00	
Apr. 3	273	1419	John T. Jones	40.00	
May 16	274	1439	W. S. Bayton, assignee of J. W. Slater	80.00	
May 17	275	557	Walker & Menzies, assignees of G. Butchart	40.00	
May 31	276	655, 656, 657, 658	Charles Crocker, assignee of C. H. Huffman		640.00
June 17	277	905	J. H. McNee, assignee of W. W. Johnston		106.84
June 17	278	377	Thomas W. Moore	80.00	
June 17	279	1347	John Harford		17.51
	280	331	Charles Crocker	240.00	
	281	1031	R. E. Jack	120.00	
	282	1180	R. E. Jack	219.58	
			Totals	6,004.01	3,349.45

Total number of acres of minimum land patented 37,217.36
Total number of acres of double minimum land patented 21,030.15

Total number of acres patented 58,247.51

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STATEMENT OF LANDS LISTED AND CHARGED AGAINST THE AGRICULTURAL GRANT OF 150,000 ACRES.

Districts.	Number of Acres.
San Francisco District	44,672.04
Sacramento District	6,216.60
Los Angeles District	7,343.68
Stockton District	9,490.30
Humboldt District	13,707.38
Shasta District	17,541.90
Visalia District	12,958.81
Marysville District	21,656.59
Susanville District	1,257.53
Aurora District	1,920.65
Independence District	1,360.00
Total acres listed	138,125.48

STATEMENT OF DELINQUENT PURCHASERS OF SEMINARY LANDS (GRANT OF 72 SECTIONS), SHOWING AMOUNT DUE.

Name of Purchaser.	Number of Location.	Date of Certificate of Purchase.	Meridian.	Township.	Range.	Section.	No. of Acres.	Description.	County.	Amount of Principal unpaid.
John Kegg	17	Oct. 1, 1859	M. D.	44 N.	6 W.	6	160	S.W. ¼	Siskiyou	$160 00
Samuel Musgrove	25	Oct. 1, 1859	M. D.	45 N.	5 W.	28	160	S.E. ¼	Siskiyou	160 00
Jaque Fernandez	33	Oct. 1, 1859	M. D.	42 N.	5 W.	29	160	S.W. ¼	Siskiyou	160 00

Note.—Amount of interest due on Location 17 to January 1, 1882, $287 30. Locations 25 and 33, interest paid to January 1, 1882.

STATEMENT OF DELINQUENT PURCHASERS OF PUBLIC BUILDING LANDS (GRANT OF 10 SECTIONS), SHOWING AMOUNT DUE.

Name of Purchaser.	Number of Location.	Date of Location.	Meridian.	Township.	Range.	Sections.	No. Acres.	Description.	County.	Amount of Principal unpaid.
Joseph McKay	3	1860, May 26	M. D.	25 S.	18 E.	2 and 3	320	S.W. ¼ of S.W. ¼ of Sec. 2. S. ½ of N.E. ¼, N. ½ of S.E. ¼. S.E. ¼ of S.E. ¼, S. ½, of N.W. ¼ of Sec. 3.	Kern	$320 00

No certificate of purchase issued—Interest due to January, 1 1882, $600 48.

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The following described lands have been forfeited by applicants and are now for sale:

Name of Applicant.	Meridian.	Township.	Range.	Section.	No. of Acres.	Description.	County.
M. H. Myrick, Seminary	M. D.	25 N.	1 W.	33 & 34	640 00	W. ½ and E. ½	Tehama.
Joseph McKay, Seminary	M. D.	25 S.	18 E.	2	320 00	S.W. ¼ of S.W. ¼, Sec. 2, S. ½ of N.E. ¼, N. ½ of S.E. ¼, S.E. ¼ of S.E. ¼, S. ½ of N.W. ¼, Sec. 3	Kern.
Joseph McKay, Seminary	M. D.	25 S.	18 E.	3			
E. J. Hildreth	M. D.	11 S.	20 E.	9	2,135 89	E. ½ and S.W. ¼	Fresno.
E. J. Hildreth	M. D.	11 S.	20 E.	18		Lot 2 in N.W. ¼, and Lot 2 in S.W. ¼	Fresno.
E. J. Hildreth	M. D.	11 S.	20 E.	19		N.E. ¼, N. ½ of S.E. ¼, Lots 1 and 2	Fresno.
E. J. Hildreth	M. D.	11 S.	20 E.	19		In S.W. ¼ and Lots 1 and 2 in N.W. ¼, W. ½ of N.W. ¼, N. ½ of S.W. ¼	Fresno.
E. J. Hildreth	M. D.	11 S.	20 E.	20		E. ½ of N.E. ¼ and N. ½ of S.E. ¼, S.W. ¼, W. ½ of S.E. ¼, S.E. ¼ of S.E. ¼	Fresno.
E. J. Hildreth	M. D.	11 S.	20 E.	21		S. ½ of N.E. ¼, S. ½ of N.W. ¼	Fresno.
E. J. Hildreth	M. D.	11 S.	20 E.	30		Lots 1 and 2 in N.W. ¼	Fresno.
F. A. Foster, Seminary	M. D.	45 N.	6 W.	9	160 00	N.E. ¼	Siskiyou.
John Hilt, Seminary	M. D.	47 N.	6 W.	7	160 00	S.E. ¼	Siskiyou.

J. HAM. HARRIS,
Land Agent of the University of California.

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SECOND ANNUAL REPORT

OF THE

STATE BOARD OF PRISON DIRECTORS

OF THE

STATE OF CALIFORNIA,

For the Thirty-second Fiscal Year, ending June 30, 1881.

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STATE BOARD OF PRISON DIRECTORS.

AUG. H. CHAPMAN, President ..... Chico, Butte County.
DR. W. F. McNUTT ..... San Francisco.
JACOB H. NEFF ..... Colfax, Placer County.
GEORGE W. SCHELL ..... Modesto, Stanislaus County.
CHARLES CLAYTON ..... San Francisco.

JEROME SPAULDING, Secretary.

OFFICERS OF THE SAN QUENTIN PRISON.

J. P. AMES ..... Warden.
JOSEPH V. ELLIS ..... Clerk.
N. J. BIRD, M. D. ..... Physician.
REV. W. H. HILL ..... Moral Instructor.

OFFICERS OF THE FOLSOM PRISON.

JOHN McCOMB ..... Warden.
JOHN M. MINER ..... Clerk.
W. A. GROVER, M. D. ..... Physician.

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REPORT.

To his Excellency GEO. C. PERKINS, *Governor of the State of California:*

The Directors of the State Prisons herewith submit their second annual report as required by law for the fiscal year ending June 30th, 1881, together with such suggestions as they deem proper in connection therewith. The reports of the Wardens of the San Quentin and Folsom prisons are herewith appended, showing more in detail the management of their several departments.

It gives us pleasure to state that the affairs of the prisons of California are in a satisfactory condition.

The people of the State are beginning to realize the great want heretofore existing in the management of our penal institutions, and to understand that prison management, to meet the requirements of the day, comprises more than building walls and prison cells and meeting the enormous expense of supporting the criminal element by direct taxation.

We believe it to be one of the most encouraging aspects that has dawned on this department of the State, that the people and the press are especially attracted to its former abuses, and are freely discussing still existing faults and the proper methods of reaching a higher and a more efficient organization and management.

The more this question is discussed, the more intelligent action in the end will be reached, even though at times there should be advanced crude and absurd theories and criticisms. The experience of older and longer established institutions in other States and countries, shows they have been, in a large measure, subject to the same errors as our own. The model prison, with perfect management, that meets the ends of justice in the punishment of crime, that reforms the unfortunate transgressors of the law, and is at the same time self-supporting, is yet to be found; yet the progress in this department has, in the past few years, wrought great changes in prison management.

We view the present as a proper period in the history of our State Prison management to correct many if not all the grave errors that have been permitted to grow up with the institution. How best to make the labor of the convicts contribute to their support, how to reclaim them from the error of their ways and protect them from those who prey upon them when prison life ceases, are questions that present themselves to prison managers and the people.

These are being met in our prison as fast as the nature of the case will permit. To accomplish the work now in view, or succeed with any large portion of it, will require time and study, with possibly some failures, yet it is a work to which the present managers will address their best efforts, with confidence, that with the experience of the past, acquired knowledge of the present wants, and the assistance

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of the people through the Legislature, they will be enabled to show results that, barring political and jealous criticism, will commend the improvements and management to the thinking classes, the taxpayers, and those who are interested in prison management and reform.

The Folsom prison, where are now confined about two hundred and seventy-five convicts, has, with prison labor, reached so near completion that the Board of Directors have taken the necessary steps to comply with the provisions of the existing contract with the Natoma Water and Mining Company, made June 30, 1868, to furnish convict labor in payment for the land and quarries, now occupied by the prison. The quarries are now being opened by the convicts not engaged in the employ of the Natoma Water and Mining Company. The failure of the Legislature to make the appropriation for the building of the exterior walls of the yard makes the working of prisoners, outside the prison building, in a measure insecure, and necessitates an additional number of guards to keep them safely at work.

The contractors now employing convict labor at San Quentin are all preparing to close the existing arrangements on or before January 1, 1882.

It is now fully realized that productive labor by the convicts is essential to their discipline, health, improvement, and reformation; we therefore propose to employ those under our charge with this end in view, and as far as possible, make their employment contribute to their support. To engage in labor that would, for the present, add largest to the income for the support of the prisons, regardless of the industries that would be affected thereby, would neither add credit to the management nor carry out the wishes of the people and taxpayers.

We all have a common interest in the building up and fostering of every industry that tends to develop our resources and the home manufacturing of every article that is now so largely imported and paid for from the grain, gold, wool, and other products of the coast. We trust the question of labor will be handled satisfactorily to all parties interested, and that our efforts will be appreciated when thoroughly understood.

It is the purpose of the Board to establish only such industries as will not compete with the free labor of the State. For the present, we must necessarily continue some of the industries that are now established until others can be provided. There being no factory for the manufacture of chairs on the coast, the Board have leased, with the privilege of purchasing at an agreed price, the machinery of the California Furniture Manufacturing Company at San Quentin, with the view of using the same as soon as possible in the manufacture of chairs only.

EXAMINATIONS.

Since our last annual report there have been four examinations made into the management of our State Prisons. The first examination was made by G. K. Chase, Department of Justice, Washington, D. C. Mr. Chase was on his official round inspecting the prisons of the different States in the Union on behalf of the United States Government. It affords us great pleasure to state to your Excellency that Mr. Chase expressed himself as follows:

The impression I received of my inspection of the prison was, that as regards order, neatness, cleanliness, and discipline, etc., it would compare well with similar institutions.

The second examination was made by the Joint Senate and Assembly Committee on Prisons, in February, 1881, of which committee the Hon. B. J. Watson was Chairman of the Senate, and Judge Chancellor Hartson was Chairman of the Assembly. This committee consisted of gentlemen of all political parties. This examination was probably the most careful and exhaustive that has ever been made into our California prisons. We have great pleasure in stating to your Excellency, that this joint committee, representing as they did the people of California, thoroughly sympathized with us in our endeavors to improve the moral and physical condition of the prisoners, to improve the value of the prison property, and in our desire to teach the younger prisoners trades which will enable them to earn an honest livelihood when discharged; and, also, in our determination to render our prisons self-supporting, and without allowing the labor of the prison to conflict to any material degree with the free labor of the State.

The Honorable B. J. Watson was particularly careful, exhaustive, and conscientious in his examination into the present condition of the prison, with a view of satisfying himself as to the fitness of the directors and officers of the prison for their special duties. From his report we quote as follows:

The buildings, grounds, and guard-houses were found to be in complete order, and the entire management of the same, so far as the committee could discover, is good. The discipline is firm though not severe, and not a complaint was made by the large number of prisoners.

Many marked improvements have been made by the present management, both in the manner of treating prisoners and in the construction of buildings for the use of those in charge. The roadway leading from the ferry landing to the prison has been macadamized. New water pipes have been laid for the better protection of the buildings and workshops from fire. A substantial brick guard-house, two stories high, for the guards and officers, has been built at the entrance of the prison grounds. The walks have been graded and improved. The grounds and prison yards have been lighted with gas. The buildings and prison cells have been painted. Iron bedsteads have been substituted for the wooden ones heretofore in use; nearly all which improvements have been made by convicts, thereby giving employment to the prisoners and largely adding to the value of the property of the State.

There are several young boys now confined there who ought to be in a reformatory school or under the guardianship of some one who would put them to some useful employment. The committee found these youths receiving the best possible treatment under the circumstances. The school room is a model of neatness.

The Directors have devoted much of their time since their appointment attending to the business of the prison, and perfecting plans for the future employment of the convicts. Their services, in the opinion of your committee, are as valuable and their duties as arduous as any other commission in the State, many of which are paid liberal salaries. The Directors are deserving the sincere thanks of the entire people of the State for their active work and efficient management thus far. The Warden has exhibited marked fitness for his position, and the prisoners are receiving such treatment as will naturally tend to their well-being and moral improvement.

The Folsom prison was in an unfinished condition when the Board of Directors went into office. In July the Directors ordered as many prisoners transferred from San Quentin as could be worked with safety. The amount of work done by convicts since being transferred there is a matter deserving the highest commendation.

The first consideration with the Directors has been to provide means whereby the convicts at both places can be profitably employed. Their plans are fully set forth in their annual report, and your committee is disposed to agree with their plans, and recommend the appropriation necessary to carry them into successful operation.

Judge Hartson's report is one of the most suggestive, carefully prepared, and intelligent that we have seen on our State Prison management. To quote from his report:

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The Superintendent and associate officers of this institution, without the training and experience of officers of older countries and more ancient institutions, have done much to root out vicious practices of long standing, and to establish order in this institution.

When we visited the prison, the prisoners expressed the most kindly feelings toward their officers, and no complaints of cruelty or injustice were made, though ample opportunity was afforded.

The jute establishment, provided with great foresight by the State Prison Directors, will probably employ five hundred prisoners.

The Board of Prison Directors are gentlemen of intelligence, integrity, and well established business character, and they will probably be able, by the introduction of additional industries, to give every man employment, and make this institution self-supporting as soon as their system of labor is well organized.

The fourth examination was made by Lauren E. Crane a few weeks after the third examination, but we place it in this relation to the first and second examinations, thus leaving the third examination to be noticed hereafter. Mr. Crane is an expert book-keeper and accountant appointed by your Excellency at the request of this Board to examine the books and accounts of the prisons. After an exhaustive and careful analysis of all books and accounts, his report contained the following, viz.:

These books are kept upon the double entry principle properly applied. They are correct in every detail, elegant in point of workmanship, and so remarkable for accuracy that I was unable to find an error in any of the footings, or either the books or the pay rolls and other tributary papers, all of which vast array of figures I footed carefully by way of preliminary work. I found a voucher on file for every item of cash expended, and evidence to show that the receipts were duly and exactly entered. Another thing that aided me greatly was the clear explanatory showing made by the cash book, as it has been kept during the past year, down to the close of the last administration. Entries in this book were made in the ordinary skeleton form, and depended largely for interpretation upon the other books. The cost of maintaining prisoners per day per capita, is recognized throughout the United States as the test of capacity in prison management, so far as finances are involved. I give the following table which shows by comparison that the present administration is the most economical one that California has succeeded in establishing. * * * The saving to the State in this particular, as compared with the four fiscal years ending before the present administration came in, amounts to $36,135 annually. It must be conceded that this showing reflects credit upon the present management.

A third examination was made by a special committee of three appointed by your Excellency last July, for the purpose of inquiring into certain charges which had been made against the Warden and reflecting upon the Board of Prison Directors, with further instructions to inquire into the general management of the prisons; and among other special requests, that they should "consider the previous management of the prison under the old system with the view of its comparison with the present." The special committee made their examination and have made their report, which report calls for a few remarks from this Board.

JUTE.

In answer to the question of your Excellency: "Has the purchase of machinery and material by the Board of Directors with a view of making the prison self-sustaining been a wise and expedient measure, and has the appropriation been honorably and judiciously expended?" the special commission say:

Permit us to call your attention to the fact, that at the present date but $92,901 51 has been expended; of this sum, $44,021 was paid for jute material, and we find this sum to have been honorably and judiciously expended. We find the obligation to pay $22,100 for motive power to be economical and equitable. We find no evidences of other than honorable transactions in the payment of other sums expended in this behalf.

But on the question of profit to result from the manufacture of jute at the prison, the special committee say in their report that—

The manufactories of India have not, as yet, paid any dividend to the capital invested in them; nor does the experience of the manufactories at Dundee afford greater encouragement; except during the period of the "cotton famine," occasioned by the war of the rebellion in this country, the manufacture of jute at Dundee has not been regarded as profitable.

Now the growth and manufacture of jute is the second industry of that great and wonderful country—India. The annual export amounts to over $100,000,000; and the profits resulting to the manufacturers, according to all the evidences the Board have been enabled to obtain, have been very large. Professor Waterhouse, than whom there is no greater authority, in a letter to this Board says:

Prior to the erection of its numerous jute factories, Dundee was a small and unimportant place. It is now a large and greatly prosperous city. The chimneys of the jute factories are almost as thick as the trees of the forest. The new industry has enriched that whole region, and facilitated the exchanges of the world's commerce.

In the annual report of the Department of Agriculture of the United States for the year 1876, we find this evidence of the great profits of jute manufacture, viz:

Nearly half a century ago some sagacious Scotchman engaged in the manufacture of jute. This humble experiment has developed into a success that has enriched Scotland and promoted the commerce of the world. * * * The jute factories of Dundee have created a flourishing city and given employment to thousands of workmen, diffused prosperity, promoted the commerce of Scotland in the importation of the raw material, and the exportation of the manufactured product, and facilitated the movement of the grain crops of the world.

We scarcely need again to inform your Excellency that it was upon almost volumes of evidence of a nature similar to the above, and after a thorough and exhaustive examination of the whole subject of jute manufacture in all its various aspects, that the Board determined to undertake the enterprise. Allow us to quote from our first annual report of 1880, the principal reasons that actuated us, viz:

Acting upon the suggestions contained in your Excellency's inaugural address, respecting the manufacture of jute bags, the Board after making an exhaustive examination of the whole subject determined to establish the enterprise, and for the following reasons, viz: The enormous demand for the goods by the farmers of this State; the larger portion of their value being in the labor necessary for their production. It will afford constant remunerative employment for nearly or quite five hundred convicts, many of whom might be physically incapacited for the hard labor required in other branches of industry, and especially because of its non-competition with free white labor, and of the unqualified indorsement it had received from leading farmers and other business men of the State.

While it is impossible to say with absolute certainty whether this undertaking will be financially profitable to the State, the Board, since the near approach of the completion of the jute works, see no reason to distrust the practicability or wisdom of the enterprise; and feel that it is but just that they should be accorded a fair trial, and receive the friendly coöperation and support of the people in their efforts to make the prisons of this State self-supporting, and to benefit the convict through the healthful and reformatory influences of diligent labor.

The people through their sworn representatives, in Senate and Assembly, have fully approved and ratified the enterprise by an almost unanimous vote in making the appropriation asked for by the Board.

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JUTE CULTURE.

In reference to the growth of jute in this State, the special committee expressed "the unqualified opinion that jute cannot be profitably grown in California. That the plant would not attain a height of over three feet in our climate. That it is a tropical plant, requiring a hot, moist climate, with a high degree of temperature at night during its growth."

In the annual report for the Department of Agriculture for 1876, already referred to, we find the following, viz.:

> What has been successfully accomplished in Dundee can be done, with a still greater success, in the United States. We not only can spin and weave the fiber, but we can also raise it. We not only can derive the profits of making the fabrics, but we can also enrich ourselves by the two-fold economics of the growth and manufacture of the staple.

In the letter already referred to, of Professor Waterhouse to this Board, he also says:

> The successful cultivation of jute in this country has now passed beyond the limit of mere experiment. A southern planter has informed me that he can raise jute as easy as he can Indian corn. Jute is quite extensively cultivated in South Carolina. A factory has been erected for the manufacture of the domestic product. Portions of the Sea Islands, large areas in Florida, Louisiana, and Texas are admirably adapted to the cultivation of jute. Its cultivation ought to add scores of millions annually to California and the Gulf States. If California and the Gulf States fail to naturalize Indian jute, the absence of an industry fraught with a possible profit of millions of dollars, will evince their want of energy.

Any person who will take the trouble to call upon Mr. Thomas H. Blythe, 724½ Market Street, San Francisco, can obtain some very valuable information from the report of Mr. Hugh Elias on the great Colorado Valley Land Reclamation Company, San Diego County. In his report we find the following, viz:

> For the successful cultivation of this filamentous plant (Jute), these lands present every required condition, while their newness and great fertility, by comparison with the half exhausted lands of British India, would suggest a growth and quality of fiber in every respect superior, and it would be natural justice for California to furnish the material for one of its own greatest needs.
>
> It takes fully one twelfth of the total wheat product to pay for its sacking, and the question naturally arises, how can these enormous expenses be ameliorated in the future? and the answer is, let jute be produced in California, and let California labor manufacture it. Its planting and raising are both simple and easy. It is a hardy plant, requiring less heat and less care and attention than either sugar cane, cotton, ramie, or hemp. It exercises an antagonistic influence over insects, especially of the lepidopterous tribes which generate caterpillars. Cotton fields belted by jute are thoroughly protected from insects and devouring worms. Besides its valuable fiber, the roots and woody stems are used for paper, the seeds make oil cake, the soft tips of the sprouts are eaten, and the refuse makes excellent manure.
>
> The expenses of its cultivation are less than half that of cotton, while its profits are fully twice as great, and the yield is from two to five times that of either hemp or flax. There can be no spot on the American continent more especially adapted to the successful cultivation of the ramie and jute plants than these Colorado bottoms, San Diego County. It will produce a plant of quick growth, resulting in three or four harvests a year. It will also give a tall plant, about eight feet high at each cutting.

JUTE MACHINERY.

The special commission have indulged in some criticisms as to the conditions of the agreement between Fairbairn, Kennedy & Naylor and the Board of Directors, to the effect that there was no sufficient guarantee as to the quality of the machinery to be furnished. The Board were satisfied, upon proper inquiry, of the good character and responsibility of the contracting parties named, and their written

contract to furnish the machinery enumerated in the specifications "all complete and of the best quality," the Board regarded as a sufficient guarantee for the proper performance on their part of the conditions of the contract. To have imposed any harder terms upon the manufacturers would have cost the State considerable more for the machinery without any corresponding benefit. And we take pleasure in announcing to your Excellency that the machinery has all safely arrived, is already unpacked, examined, set up, and found "to be all complete and of the best quality," according to contract. The special commission use this language in reference to the setting up of the machinery and the supervision of the manufacture of the jute, viz.:

> As the case now stands, the labor of the convict at San Quention is about to be committed to a process of manufacture requiring constant and intelligent supervision; and this supervision is apparently to be men chosen for their politics alone, and possessing as little knowledge of commerce and manufactures as of penal science. No provision has been made for setting it (the machinery) up at the prison by any other than unskilled labor.

As a Board intrusted with a great responsibility by your Excellency on behalf of the people of California, we cannot do less in justice to ourselves, and in consideration of your Excellency's relation with the enterprise, than to advise you of the action of the Board regarding this subject.

Of course, at the time the investigation referred to took place, no provision had been made for setting up the machinery, and for the obvious reason that the building was not sufficiently completed to allow that to be done. But we can assure your Excellency that the Board did not fail to make ample provision for the necessary skilled superintendent, mechanic, artisan, or laborer, whenever one was needed. One of the Assistant Superintendents, who has had some thirty-five years' experience in the manufacture of jute in Scotland and India, gave us the benefit of his experience and advice in ordering the machinery, and consulted, at our request and on our behalf, the agent of Fairbairn, Kennedy & Naylor when he was here, and was promised then by Warden Ames, the situation he now occupies. Others equally competent had made application for the position of Superintendent and assistants; some from this country, and some from Europe, before the machinery had arrived.

The Superintendent and his assistants are men of long experience in the manufacture of jute, and were selected solely for their known skill and ability in the manufacture of this fiber, the politics of each being entirely unknown to this Board.

The Superintendent, Mr. Robertson, has had twelve years' experience in the Alameda Jute Works in this State, and previously to his coming to this State had charge of a large jute manufactory in France. He was educated by his father in Scotland, not only to manufacture the jute fiber, but the machinery as well. His assistants, Messrs. Falkner and Mathews, have each some thirty years' experience in the manufacture of jute in Scotland, India, and this country.

Your Excellency will certainly remember how solicitous this Board was to procure the most competent superintendents, having on so many occasions consulted you on this subject.

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SOME COMPARISONS.

The special committee having determined not to "consider the previous management of the prison under the old system, with the view of its comparison with the present," although requested to do so by your Excellency, the Board take the liberty of referring your Excellency to their first annual report of 1880, and also to the report above referred to of Hon. B. J. Watson, Chairman of the Senate Committee on State Prisons, and to state the following facts:

The high wall inclosing the prison was crumbling down and badly worn out by the storms, and unless repaired would soon have to be rebuilt. The past Administration had asked the Legislature for $10,000 to repair it with cement. It is now cemented on both sides, is impervious to rain, and is good for many years to come. The work was done by prison labor at a cost of only $800 to the State.

The past administration paid the Marin County Water Company $1,000 per month for water, and took a receipt for that sum paid on account, allowing the water company to accumulate and charge a bill of thousands of dollars against the State for what said company claim to have been an extra supply, which the company are now endeavoring to collect. The present administration paid said company $1,000 per month, and took a receipt in full of all demands, although the quantity of water used was much greater.

The past administration procured for the work-shops a hundred and sixty horse-power engine, with two iron boilers (which have already had to be replaced), at a cost of $31,170 50, as shown by the annual report of the Warden, of 1879, while the present Board of Directors have purchased for the jute factory (of Prescott, Scott & Company) a four hundred and eighty horse power engine, with four large steel boilers, all of the best pattern, quality, and workmanship, including the work and expense of placing them in position ready for use, at a total cost of $22,100.

When the present officers assumed charge of the prisons there were confined at San Quentin, 1,446 prisoners. Besides the few who were required for cooking, washing, repairing clothing, and other necessary work, less than 200 were employed in the work-shops, or earning anything towards their support, or doing anything for the State.

Between the twenty-sixth of July and the first of September, 1880, about three hundred prisoners were transferred from San Quentin to the Folsom prison, and were all immediately put to the work of completing that prison, and within a few months after entering upon the discharge of his duties, Warden Ames had every prisoner who was not physically incapacitated, at work in the shops, earning money for the State, or working in the brick yard, on the jute factory, or on the various improvements made to other property of the State.

As shown by the accompanying report of the Warden, there were drawn from the State treasury, for the general support of the prison at San Quentin, $25,502 30 less than the sum required for the same purpose the previous year, and, as shown by the report of Lauren E. Crane, before mentioned, "the present administration is the most economical one that California has succeeded in establishing, and that the saving to the State, in this particular as compared with the four fiscal years ending before the present administration came in, amounts to $36,135 annually."

PRISONERS DISCHARGED AND RECOMMITTED.

The special commission, in their report, have given a tabulated statement of forty-five prisoners discharged during the seventeen months commencing February 1, 1880, and returned again upon a new charge, and during Warden Ames' administration. This is certainly an error, as will be seen when it is remembered that Warden Ames did not enter upon the discharge of his duties of Warden until March, 1880, Warden Johnson having remained in charge until March, receiving the pay for the time.

Cases numbered 1, 2, 5, 7, 10, 11, 15, 25, 35, 36, 37, and 43 were all discharged before Warden Ames took charge of the prison.

Cases numbered 3, 12, 18, 23, and 28 were discharged a few days after Ames took charge; while many of the remainder of the forty-five cases were discharged within the first few weeks of Ames' administration. Hence we protest that the return to the prison of these convicts ought not in justice to be cited as any evidence whatever of the absence of a proper discipline under the present administration. It has been asserted that it was the mild and lax system of prison discipline that attracts the criminal element of older communities to this coast. We emphatically dissent from this view on indubitable proof and undoubted authority, at least so far as the present administration is concerned. The criminal element of older and well regulated communities came to this State because it was isolated, sparsely settled, had no railroads, and but few telegraph lines; and hence they might the more readily ply their criminal avocations, while their chances of escaping arrest and punishment were always better than in the older communities from which they came. In short, they came to California for the same object that they went, or now go, to Arizona, New Mexico, and Colorado—to concoct and execute schemes of rapine, robbery, and murder. They probably had heard, too, of the laxity of the administration of criminal law that obtained here; that some of our Judges were apparently more interested in politics than in the administration of justice; and of the easy virtue and sickly sentimentalism of California juries. Take for instance the celebrated murder trials that have so recently occurred in San Francisco and Oakland. Does any one suppose that mild or lax prison discipline had the least influence upon the murderers in making up their minds to commit their bloody deeds? Did not the murderer in each case either distort some slight motion of the murdered victim into evidence of a murderous attack upon the murderer; or some thoughtful look of the murderer just before and immediately after the commission of his foul deed, into conclusive evidence of emotional insanity?

Had not De Young's murderer calculated his chances for escape before venturing to perpetrate one of the most deliberate and cold blooded murders ever committed in our State? And did he not more than escape? Was he not dragged in triumphal car through the streets of San Francisco? not as a terror to evil doers, but as an indorsement of the bloody homicide and a jury's perfidy? Who does not know that the history of murder trials in California, and murderers who have gone scot free of trials have had much to do with stimulating and encouraging the murderer on to his bloody crime.

The California Prison Commission, at a Convention, recently held

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in the City of San Francisco, summed up the causes of crime as follows:

I. Lack of proper parental training, or training which is actually bad. This results from:
First—Ignorance on the part of parents as to their duties, and the proper manner of discharging them.
Second—Weakness, leading parents to a too free indulgence, or to an undue confidence in their children.
Third—Poverty preventing parents from providing attractive homes and other suitable restraining agencies for their children; leaving them with little or no time to give to look after them.
Fourth—Criminal indifference of parents.
Fifth—Actual criminal teaching—parents encouraging their children to steal trifles, such as bits of wood, coal, vegetables, etc.
Sixth—Criminal example and influence of parents, who are actual criminals themselves, and who train their offspring to crime.
Seventh—Intemperance of one or both parents, which brings the poverty already spoken of as a cause of crime in children, as well as demoralization generally in the household.
Eighth—Lack of industrial training. Children grow up in idleness or without any regular calling, especially without trades.
Ninth—Orphanage, partial or complete.

PARENTAL TRAINING.

II. Lack of good parental training of boys and girls brings them together in loose intercourse on the street and elsewhere, especially at balls and picnics. This looseness is promoted by drink, and by evil influences surrounding them at low drinking places—the results being prostitution and crime.
III. Illiteracy, through education without moral training makes bad men more dangerous.
IV. Gambling and stock speculation, as often conducted, causing neglect of legitimate business, bringing financial ruin, leading sometimes to desperation, and in nearly every case to general demoralization.
V. Prostitution, corrupting the whole spiritual nature of men—as well as of women—blunting their moral senses, and driving them to the commission of crime for the means of gratifying their passions, and of keeping in favor with the objects of their lusts.
VI. Public places of corrupting amusements; yellow-covered literature.
VII. Impure and sensational literature, including details of crime, as published too often in the newspapers.
VIII. Criminal capitalists, including receivers of stolen goods; persons who back up actual criminals with money; supplying them with the means of plying their criminal avocations; furnishing them with bail when arrested, and with the means of defense when brought to trial, and assisting them in various ways by the use of money to escape punishment.
IX. The unsettled condition of affairs, socially, commercially, and otherwise, tossing men about, throwing them out of employment and leaving them adrift in straightened circumstances among strangers, without the social restraints which at that critical time they so much need.
X. The influx of strangers who come among us with false ideas of the country and the condition of things here, or with aimless purposes; being disappointed, some fall into bad company, others become desperate and plunge directly into crime. Many of these new comers are indeed already criminals, and others are so nearly so that it requires but little to make them such actually.

TRAMPS.

XI. The mode of farming here, which does not provide homes for farm laborers, but promotes roving and unsettled habits, as well as financial uncertainty, and often pinching impecuniousness.
XII. Tramping, promoted as above, and in may other ways.
XIII. Greed; making men engage in money-getting, regardless of the welfare, or even the rights of others.
XIV. Fraudulent methods of doing business. (1) Setting a bad example. (2) Making desperate men who have been cheated or unfairly dealt with.
XV. Extravagance in dress and modes of living; leading others into crime for the means of emulating the example thus presented to them.
XVI. Laxity in the administration of criminal law, thus encouraging crime. Money, friends, and influence being apparently almost a sure protection against punishment.
XVII. Legal technicalities and quibbles impeding, and often obstructing, and even thwarting justice.
XVIII. Our jails and other prisons themselves, which are not reformatory in construction, and which lack proper organization. The result is that prisoners fail to receive the right kind of reformatory training, but, on the contrary, are exposed during their imprisonment to corrupt influences, and then turned adrift, after the disabling process which they have undergone, to shift for themselves.
XIX. Intemperance, and the means so abundantly at hand for its promotion.

Nevertheless, in the face of this not a few persons stand up to denounce the State Prisons of California as "nurseries of crime" for which the prison officers are solely responsible, because they have not accomplished what all the moral and christianizing forces of civilized society, and the denunciations and penalties of the criminal law have failed to accomplish, viz: the prevention of crime and the complete reformation of criminals.

When any State Prison can be found, or any system of prison discipline devised, by which to effect a general reformation or regeneration of the convict, when all the moral forces of society and the terrors of the penal law cannot prevent crime, we may reasonably expect the millennium to be near at hand.

We do not say that prison system and prison discipline do not have much to do with prison reform; but what we want and must have in this State is, not a more rigid prison discipline, but a more faithful administration of the laws, by all the officers of the law, and especially by Judges, who will not bedraggle the judicial ermine in the mire of politics, and by jurors of intelligence and integrity, who can duly appreciate the moral influence that good laws well administered have upon the criminally inclined element.

When this condition of things shall exist, we may have a reasonable expectation of seeing the population of our County Jails, State Prisons, and other penal and reformatory institutions of our State, greatly reduced, and the burdens of the taxpayers materially lessened.

No little abuse from certain quarters has been unjustly, we think, heaped upon the prison authorities on account of the system of prison government which exists. For any vice in the system, the law and not the prison officers are to blame. The present administration have, so far as it has been possible, put every convict to some useful employment, and have, so far as the character of the buildings will allow, remedied the evils of indiscriminate association of the criminals by a classification based on age, education, state of mind, and former life of the convict, and the character of the crime committed by him.

In their annual report of 1880, the Board of Directors called the attention of your Excellency to this vice in our penal system, and recommended an appropriation for the enlargement of the prison yard and the erection of suitable buildings therein, as an indispensable prerequisite to a proper classification of the convicts.

MILEAGE OF DIRECTORS.

The Act entitled "An Act to define, regulate, and govern the State Prisons of California," approved April 15th, 1880, was introduced by Judge Tyler, Chairman of the Assembly Committee on State Prisons. This bill was passed by the Assembly April 13th, 1880, by a vote of fifty-eight to five, and by the Senate by a unanimous vote. The Board of Directors neither suggested nor promoted its passage. Section seventeen of said Act, among other things, provides that the "Directors shall be paid for traveling and other expenses while engaged in the discharge of their duties, twenty cents per mile for the number of miles actually traveled." For the time commencing at the date of their appointment, down to March 14th, 1881, the Directors received the following sums:

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Director Chapman	$2,723 41
Director Neff	1,818 40
Director Everson	1,176 00
Director Schell	1,603 65
Director McNutt	250 10

These sums, except that portion of the same which was for mileage prior to May 31, 1880, were duly allowed and approved by the State Board of Examiners, composed of the Governor, Secretary of State, and the Attorney-General, and warrants on the State treasury, duly issued for the same by the Controller. January 24th, 1881, a bill known as Senate Bill No. 258, and entitled "An Act to amend Sections 11, 17, 18, and 20, and to repeal Section 30 of an Act entitled an Act to define, regulate, and govern the State Prisons of California, approved April 15th, 1880," was introduced. On the 24th of February, 1881, one month after its introduction, the Senate, by a vote of twenty-four to three, and on the fourth of March, 1881, the Assembly, by a vote of sixty-one for, and none against, and after a full and thorough discussion, both as to the merits and the constitutionality of the amendment of Section 17, passed said bill. This amendment of Section 17, among other things, provides that "the Directors shall receive a compensation of ten cents per mile for traveling expenses, and $100 per month for other expenses incurred while engaged in the performance of official duties."

The undersigned, members of the Board of Directors, positively affirm that they neither suggested nor promoted the passage of said amendments through either branch of the Legislature, as the evidence of Senator Sears, who introduced the bill, taken on the investigation by the special commission, clearly shows.

Under this amendment, the Directors received for traveling and other expenses incurred while in the performance of their official duties, from March 14, 1881 (the date of approval of said amendment), to July 31, 1881, the following sums:

Director Chapman	$885 75
Director Neff	819 30
Director Everson	596 00
Director Schell	699 80
Director McNutt	497 40

Since July 31, 1881, although they have each expended hundreds of dollars in the performance of their official duties, the Directors have neither presented their accounts nor received anything for traveling and other expenses. So far as this Board had any knowledge, the validity or constitutionality of either of said Acts providing compensation or payment of expenses of Directors was never questioned, until about the time of the appointment of the special commission to inquire into the affairs of the State Prisons.

We deem it just and proper to state in this connection that the Attorney-General never at any time informed this Board that he entertained an opinion adverse to the validity of section seventeen of said Act, or its amendments thereto, or that the members were not entitled to the compensation they were receiving for mileage and other expenses. Both branches of the Legislatures of 1880 and 1881, having many able lawyers, some of whom were members of the late Constitutional Convention, the Attorney-General not having raised any objections to the passage of said Act or the amendments thereto while under consideration by the Legislature, and the

Attorney-General having been a member of the Board of Examiners which passed upon and allowed all the claims of the Directors for mileage which were presented to them for allowance under said Act of 1880, the Board certainly did not suppose there was any question as to their right or the propriety of their receiving the compensation provided by the Act aforesaid, or the amendments thereto.

Notwithstanding several able constitutional lawyers had advised the Board that said Act and amendments are valid and constitutional, and that they are entitled to receive the compensation provided, shortly after said investigation took place, to wit: on September 18, 1881, the Board unanimously adopted the following preamble and resolution, and advised the Attorney-General of their action, viz.:

WHEREAS, The constitutionality of section seventeen of the Act, to define, regulate, and govern the State Prisons of California, approved April 15, 1880, as amended by the Act of March 14, 1881, providing for the compensation of Prison Directors, having been called in question, and

WHEREAS, Said Directors are desirous that the validity of said Act shall be determined by the proper tribunal; now therefore,

Resolved by the Board, That the Attorney-General be and he is hereby requested to take such action in the premises as may be necessary to obtain a judicial determination of said question by the Supreme Court.

The officer above named has commenced a separate suit against each Director, to recover the following sums, to wit: from Director Chapman, $3,777 51, being $168 36 more than he has ever received; from Director Neff, $2,891 70, being $254 more than he has ever received; from ex-Director Everson, $2,056 40, being $284 40 more than he has ever received; from Director Schell, $2,546 45, being $243 more than he has ever received; and from Director McNutt, $1,092 60, being $345 10 more than he has ever received.

The Board are at a loss to determine why the Attorney-General has sued each Director, not only for the mileage that was allowed him by the State Board of Examiners, of which Board the Attorney-General was a member, but for more than he (the Director) has ever received from the State, under the Acts aforesaid. And further, they take this occasion to observe that it was entirely unnecessary to subject each Director, to the expense of a separate action, as one suit would sufficiently test the whole question involved, and fully adjudicate the rights of all parties concerned under the statutes or the Constitution.

While the Directors refrain from the expression of any opinion regarding the validity of the Acts aforesaid when tested by the provisions of the Constitution, they fail to discover wherein the ends of justice, or the interests of the State will be subserved by the commencement of five separate actions, to recover the traveling and other expenses received by the Directors under the laws duly enacted by the representatives of the people, on their own motion, by an almost unanimous vote. Neither do they believe that the public interest demands, or that the people desire, that their public servants shall not only render their services without compensation or reward, but that they shall in the meantime pay the costs and expenses necessarily incident to the performance of their official duties out of their own private funds. Nevertheless, if it shall be so decreed, they propose to yield a prompt compliance with the mandate of the Court.

It will be seen that if said suits are properly brought, no proper

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provision whatever has been made for even the reimbursement of the heavy expenses and losses, to which the Directors have necessarily been subjected while in the discharge of their official duties.

The special commission, in their report to your Excellency, indulged in a somewhat detailed statement of the mileage and other expenses of the Directors, from the time of their appointment to the thirty-first of July, 1881, for the purpose of showing (to use their own language) "the progression of legislation towards converting these non-salaried positions into highly remunerative offices," and for the apparent purpose of showing that much of the traveling of Directors was unnecessary, without any explanation or statement of the heavy expenses necessarily paid out by the Directors in the discharge of their official duties, or the serious personal losses resulting to each member of the Board on account of his necessary absence from his home and neglect of his own private business; and without statement or explanation of the necessity of the many business meetings which were held, the large amount of committee work of Directors, which, in connection with the regular meetings, not unfrequently required nearly the entire month on account of having to complete the prison at Folsom, the adjustment of several matters relating to the construction of said prison which were left unsettled by the past administration, the many changes and improvements required at San Quentin, the removal of prisoners from San Quentin to the Folsom prison, and the organization of a new system of labor rendered imperative under the new organic Act of 1879.

And here we call your special attention to the fact that the special commission, in their report, state that Director Schell had received for mileage, from the date of his appointment to May 31, 1881, including what he would receive for the months of June and July, 1881, $3,295 45, which sum is exactly $992 more than he did receive, as is distinctly shown by the accounts and vouchers on file.

Of the labors of the Directors, the Senate Committee on State Prisons of 1881, through their Chairman, Senator Watson, say:

> The Directors have devoted much of their time since their appointment to attending to the business of the prison, and perfecting plans for the future employment of the convicts. Their services, in the opinion of your committee, are as valuable, and their duties as arduous as any other Commission in the State, many of which are paid liberal salaries.
>
> The Directors are deserving the thanks of the entire people of the State for their active work and efficient management thus far.

It is but just to affirm on behalf of this Board, that whoever entertains the belief that the office they hold is a sinecure, or that there is any remunerative salary attached thereto, or that it results in anything else than a pecuniary loss to each Director, is certainly laboring under an error and a delusion.

It is not the purpose of this Board to notice, in this report, all the criticisms or attacks made upon them by the special commission, nor to discuss or lay bare the motives that inspired them. For the present at least, we think the above discussion will sufficiently demonstrate the character and animus of the report of the special commission.

This Board have not, nor do they intend to run the prisons of the State in the interest of any newspaper, party, clique, or corporation. But they affirm that they have always, with a conscientious regard for their official obligations, endeavored to subserve the best interests of the State and the institutions committed to their charge.

They feel confident, too, that an impartial investigation into the whole affairs of the prisons will reveal the fact that their efforts have been reasonably successful, and that the prisons will compare favorably with the best penal institutions in the United States, as regards order, neatness, cleanliness, discipline, and economy. Nor need they rely solely upon their own assertions to establish the truth of these claims. They take especial pride in again referring to the official reports of *sworn* officers, viz: Of Mr. G. K. Chase, of the Senate and Assembly Committees on Prisons, of 1881; and of Lauren E. Crane, the expert appointed by your Excellency, to examine the books, accounts, and records of the prisons, to substantiate the equity of their claims.

The personal examination of your Excellency, from time to time, and the evidence furnished by many persons of the highest character for truth and integrity, who have frequently visited the prison and been perfectly familiar with prison management at San Quentin during the twenty years last past, must convince your Excellency, and the people of this State, that the claims of this Board are well founded.

The Board only ask that fair treatment shall be accorded them, and that they may receive the assistance and encouragement of the people in their efforts to render the prisons of this State self-supporting, to improve the discipline thereof, and to reform the prisoner; rather than that they should be the subject of constant and unjust criticism, and unmerited abuse.

AUG. H. CHAPMAN,
W. F. McNUTT,
JACOB H. NEFF,
GEO. W. SCHELL,
CHAS. CLAYTON,

Dated, December, 1881.

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SECRETARY'S REPORT.

OFFICE OF THE STATE BOARD OF PRISON DIRECTORS,
410 Kearny Street, San Francisco, July 1, 1881.

To the Honorable State Board of Prison Directors:

GENTLEMEN: I have the honor to report that during the year ending June 30th, 1881, there have been thirty-nine business sessions of the Board recorded in the general record book of the State Prisons at this office, fifteen of which were held in San Francisco, twelve at San Quentin, and twelve at Folsom.

Your last annual report of the prison has been duly exchanged for similar reports from the various State Prisons throughout the United States.

A large number of books and periodicals have been gathered from the libraries and the philanthropic people of San Francisco, and such as were found suitable have been sent to the prison libraries, free of charge, by Wells, Fargo & Co.

The expenditures of this office during the fiscal year ending June 30th, 1881, were as follows:

Salary of Secretary	$900 00
Rent of office	300 00
Furniture	45 75
Other expenses	129 52
Total	$1,375 27

Respectfully submitted,

JEROME SPAULDING,
Secretary.

REPORT OF THE WARDEN

OF THE

California State Prison.

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WARDEN'S REPORT.

OFFICE OF THE WARDEN, CALIFORNIA STATE PRISON,
SAN QUENTIN, July 1st, 1881.

To the Honorable Board of State Prison Directors:

GENTLEMEN: In submitting this, my report for the fiscal year ending June 30, 1881, I find no reason to change in any great measure the views expressed in my last annual report respecting the government of the prison and the general management thereof. Inasmuch as prison ethics has been so thoroughly discussed by the several prison commissions and the prison convention recently held in this State, I do not feel called upon at this time to make any suggestions, but hope at the next annual report, after the experience we may have in the entire change of prison labor which must take place at the first of next year, that I will be able to make such suggestions as may be of some value.

Considering it necessary only to refer to the statistics for the fiscal year, I offer such detailed statements as properly belong to the different departments of the prison, the result combined showing a decided advantage, both as to labor and economy, for the fiscal year ending June 30, 1881, as compared with the work and improvements of previous years.

For a full understanding of the financial transactions during the fiscal year, your attention is called to the tabular statements furnished by the State Clerk, from the general books of the prison.

Referring to Table No. 1, it will be understood that the items of receipts do not embrace the entire amounts due the State for the fiscal year, for earnings, etc., for the reason that in the matter of labor, merchandise, and other accounts, the amounts charged in any one month cannot be collected until the first or second of the month following. I especially draw your attention to this matter to explain what may appear as a discrepancy between tables showing the cost statements against cash receipts or disbursements.

In the exhibit of maintenance of prisons, for instance, the amounts charged for salary belong to the actual costs of the months they represent, while the cash paid out for salary represents the balance for previous months, with sundry advances made during the months in which they are charged.

The deficiency account in cash disbursements represents the actual deficiency from the previous administration together with the interest accruing.

In February, 1881, two warrants of $10,000 and $13,300 were drawn from the State treasury for the first and second part payments on jute machinery, and were transferred direct to Messrs. Balfour,

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Guthrie & Co., San Francisco, agents of Messrs. Fairbairn, Kennedy, and Naylor, of Leeds, England, without being represented in bank as a deposit, to save collection charges and interest, therefore they do not show on the statement of the State Clerk. The transaction, however, is fully recorded in the General Day Book.

Table No. 4 is a comparative statement of receipts from the State treasury, together with expenditures for the general support of the prison, the result showing a decrease for the present fiscal year both as to drafts upon the State treasury and the maintaining expenditures.

Included in the disbursements of the fiscal year ending June 30, 1881, are the payments for the many improvements made—the property of the State being greatly increased in value—whereas in the previous fiscal year there was no improvement of any value made except in the cost of the large reservoir.

Your attention is also respectfully called to the reduction in the accounts embracing the cost of maintaining prisoners, as compared with the previous fiscal year; the result reducing the average cost per capita, per day, from $33\frac{1}{10}$ cents to $32\frac{5}{10}$ cents, with a less average number of prisoners, while the quality of food and clothing has been so far improved (yet in an economic way) as to add to the health of the prisoners, which fact is fully attested by the decrease of patients claiming illness of a mild character.

Under the present contract system, I have endeavored to distribute and dispose of the labor to the best advantage to the State, and have used every effort possible in the management to add materially to the value of the State property in the vast improvements needed and called into requisition, at the same time making as economical use of the different funds as was possible for the extended improved character of the prison.

For the fiscal year ending June 30, 1881, there was drawn from the State treasury, for the general support of the prison, $25,502 30 less than was required for the expenses of the previous fiscal year; and, although the Cash Statement No. 2 of the Clerk shows a large expenditure, the actual expense for the ordinary support of the prison has been decreased; the items of expenditure for brick lands, gas mains, jute machinery, jute material, etc., being authorized by legislative enactment, having in view a material change in the employment of the labor of convicts. During the fiscal year ending June 30, 1881, the value of the State property has been increased more than $60,000; which, considered with the fact as is shown by Table No. 4 of the Clerk's report, that there has been drawn from the State treasury, general appropriation, $25,502 30 less than the expenses for the previous fiscal year, gives a gain of over $85,000 to the value of the State property, against a gain of not more than $12,000 during the previous fiscal year—that amount being expended upon the large reservoir.

The many extensive improvements now completed, with others approaching completion, for the new prison system, are of a most excellent and substantial character, the work being thoroughly finished from the latest accepted building plans.

Excepting the troubles, with which you are familiar, all departments in the prison have done most excellent work with the opportunities before them, and have aided me most materially in my efforts towards accomplishing a positive and thorough system of

treatment, humane in its nature, toward the convicts, while at the same time pointing to such reform in the economy of management and the system of labor as will, I hope, place the prison finally high in the scale of the best class of penal institutions in the United States.

The statements of the Turnkey, Prison Physician, and Moral Instructor, follow in proper order and are complete in detail. By comparison with the report for the previous fiscal year, it will be seen that quite a reduction has been made in the expense for the principal items, of maintaining cost belonging to the Turnkey's department, and for drugs and medicines, showing a close regard for economy, yet with judicious management.

In concluding my report, I desire to offer my thanks to your honorable body for your courtesy at all times during our official intercourse.

Very respectfully, your obedient servant,

J. P. AMES, Warden.

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REPORT OF THE CLERK

OF THE

California State Prison.

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CLERK'S REPORT.

Honorable J. P. Ames, Warden:

DEAR SIR: I herewith submit to you my report for the fiscal year ending June 30th, 1881, embracing tabular statements of the cash receipts and disbursements, together with statement of cost for maintenance of prisoners, a comparative statement accompanying, all of which are in detail and explanatory.

Very respectfully,

J. V. ELLIS, Clerk.

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No. 1.

CALIFORNIA STATE PRISON, SAN QUENTIN.

Abstract of Total Cash Receipts, from all sources, for the Fiscal Year ending June 30, 1881.

Months.	Labor.	Merchandise, etc.	Brick.	Live Stock.	Hogs.	California State Prison, Folsom.
1880.						
July	$ 150 00	$2,228 54	$1,014 25		$30 00	
August	3,432 46	2,166 87	400 00			
September	3,275 50	1,153 45	526 00		68 00	$1,422 56
October	3,229 12	1,305 95	300 00			80 00
November	5,634 12	1,624 27				987 28
December	4,903 30	1,293 53	921 00	$160 00		
1881.						
January	4,753 25	1,914 90				375 95
February	4,164 50	1,243 93			254 00	
March	3,294 25	1,024 60			700 64	
April	3,255 50	1,287 08	269 75		1,033 02	765 82
May	3,378 34	1,453 46	220 00			
June	5,140 25	3,228 10	2,660 58	150 00		
Totals	$44,620 59	$19,924 68	$6,311 58	$310 00	$2,085 66	$3,631 61

No. 1—Continued.

Months.	United States.	State Treas'y, General Appropriation.	State Treas'y, Jute, etc.	State Treas'y, Deficiency.	State Treas'y, Real Estate and Gas Mains.	Total.
1880.						
July	$2,592 25				$15,616 00	$21,631 04
August						5,999 33
September	2,587 30	$35,250 40				44,283 21
October		19,864 10				24,789 17
November	1,148 00	11,526 47			4,000 00	24,920 14
December		18,436 94				25,714 77
1881.						
January		13,276 41				20,320 51
February		15,064 54				20,726 97
March	1,110 75	15,000 00	$18,000 00	$67,018 14		106,148 38
April		35,300 00	44,000 00			85,911 17
May	937 50	431 30				6,420 60
June						11,178 93
Totals	$8,375 80	$164,150 16	$62,000 00	$67,018 14	$19,616 00	$398,044 22

Remarks.—The collections for labor for the fiscal year shown to June 30, $44,620 59. That amount does not include the labor performed in June, 1881, amounting to $5,162 25, and collected in July, 1881. Merchandise, etc., refers to sales in commissary to contractors, employés, etc. The items of receipts for brick account do not include the value of the large amount of brick used in the jute factory and other improvements, amounting in the aggregate to 2,131,000, and of the value of $14,917.

No. 2.

CALIFORNIA STATE PRISON, SAN QUENTIN.

Abstract of Total Cash Disbursements for the Fiscal Year ending June 30, 1881.

Months.	Salary.	Maintenance of Prisoners.	Prison Improvem'ts and Gen'l Expense.	Jute Machin'y, Factory, etc.	Jute Material.	Live Stock, Hogs, etc.
1880.						
July	$541 20	$1,989 38	$574 44			(l. s.) $540 00
August	3,835 98	3,812 54	374 12			
September	4,280 89	16,019 32	20,221 97			
October	4,412 29	8,762 47	9,619 42			
November	4,117 63	8,097 71	5,795 65			(h.) 640 40
December	4,194 54	8,732 71	9,020 97			(h.) 71 75
1881.						
January	3,754 26	8,344 41	7,216 31			
February	3,684 50	9,192 00	6,777 44			(l. s.) 50 00
March	3,933 11	8,339 62	6,428 47		$18,078 77	(l. s.) 350 00
April	3,749 77	9,426 48	5,383 52	$1,346 17	310 00	(l. s.) 490 00 (h.) 958 27
May	3,719 88	8,929 80	8,934 49	18,589 10	25,500 74	
June	4,069 90	8,365 30	7,776 64	848 58	131 50	
Totals	$44,293 95	$100,011 74	$88,123 44	$20,783 85	$44,021 01	$3,100 42

No. 2—Continued.

Months.	Brick Accn't.	Real Estate and Gas Mains.	Deficiency Account.	Mileage and other expen's Prison Direct's. — Expenses S. F. office Prison Directors.	Totals.	Prisoners on contract labor.	Average number of Convicts.
1880.		(r. e.)					
July	$221 00	$15,616 00		$679 30 120 22	$20,281 54	285	1,520
August	287 00				8,309 64	206	1,506
September	858 25		$2,985 93		44,366 36	194	1,410
October	1,759 06		198 33		24,751 57	198	1,319
November	2,206 37	4,000 00			24,857 76	290	1,306
December	3,071 84	(g. m.)	409 90		25,501 71	302	1,262
1881.							
January	1,080 37		204 95		20,600 30	259	1,253
February	504 00		185 10		20,393 04	169	1,235
March	888 12		51,236 87		89,254 96	185	1,239
April	289 35		681 38	110 20 104 85	22,849 99	223	1,239
May	100 00			660 10 105 50	66,539 61	266	1,237
June	610 37			1,289 50 117 35	23,209 14	316	1,222
Totals	$11,875 73	$19,616 00	$55,902 46	$3,187 02	$390,915 62	241	1,312

Remarks.—The small amount charged to salary in July, 1880, is explained as follows: June salary, 1880, was included in June payments, the amount, $541 20, charged in July was for sundry advances made upon July salary to officers and guards, and the $3,835 98 charged in August is really the balance of July salary, but is shown on the cash book as paid out on the second of August. The amount of $4,069 90, charged in June, 1881, is for May salary, June salary being paid in July, 1881.

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No. 3.

Exhibit of the Cost of Maintaining Prisoners at the California State Prison, San Quentin, during the Fiscal Year ending June 30, 1881.

Months.	Subsistence.	Salary.	Water.	Clothing	Shoes.	Beds and Bedding.	Fuel.
July, 1880	$5,660 35	$4,026 38	$1,000 00	$1,326 19	$616 57	$460 39	$285 09
August, 1880	5,520 62	4,043 30	1,000 00	1,023 61	427 44	187 04	246 70
September, 1880	5,279 27	4,006 64	1,000 00	694 12	274 80	259 88	364 85
October, 1880	4,912 67	4,213 94	1,000 00	784 03	335 41	31 71	305 50
November, 1880	5,562 60	4,217 63	1,000 00	767 88	252 00	45 31	262 39
December, 1880	5,292 76	4,294 54	1,000 00	687 78	428 58	28 07	444 26
January, 1881	5,288 34	4,004 26	1,000 00	612 78	372 93	276 12	510 94
February, 1881	4,494 19	3,834 50	1,000 00	819 11	376 36	57 75	726 72
March, 1881	5,191 20	3,983 11	1,000 00	485 43	298 16	38 89	1,189 31
April, 1881	5,125 08	3,749 77	1,000 00	662 17	352 38	208 11	764 85
May, 1881	5,211 82	3,919 88	1,000 00	667 15	332 36	40 91	363 52
June, 1881	4,925 32	4,069 90	1,000 00	743 67	333 79	----------	455 59
Totals	$62,464 22	$48,363 85	$12,000 00	$9,273 92	$4,400 78	$1,634 18	$5,919 72

No. 3—Continued.

Months.	Forage.	General Expense.	Drugs and Medicines.	Stationery.	Laundry.	Total Cost per Month.	Average Number of Prisoners.	Average cost per Capita per Day.
July, 1880	$202 82	$869 19	$137 29	$91 48	----------	$14,675 75	1,520	$0 31.2
August, 1880	266 51	869 81	126 02	29 64	$13 31	13,754 06	1,506	30.0
September, 1880	213 72	775 07	95 55	79 46	----------	13,043 36	1,410	31.0
October, 1880	238 30	597 80	64 82	31 16	----------	12,515 34	1,319	30.6
November, 1880	190 19	522 85	65 93	40 47	----------	12,927 25	1,306	32.9
December, 1880	266 20	527 00	69 64	59 64	----------	13,098 47	1,262	33.4
January, 1881	237 94	474 37	48 18	50 64	----------	12,876 50	1,253	33.1
February, 1881	315 30	488 74	77 93	49 92	32 21	12,272 73	1,235	34.4
March, 1881	340 61	512 40	85 94	51 20	----------	13,176 25	1,239	34.0
April, 1881	122 98	553 62	59 98	50 74	----------	12,649 68	1,239	34.0
May, 1881	231 62	569 49	56 58	41 87	----------	12,435 20	1,237	32.4
June, 1881	197 82	500 93	73 61	39 46	----------	12,340 09	1,222	33.6
Totals	$2,824 01	$7,261 33	$961 47	$615 68	$45 52	$155,764 68	1,312	$0 32.5

No. 4.

Receipts and Expenditures for the General Support of the Prison, for the Year ending June 30, 1881, compared with those of the Fiscal Year ending June 30, 1880.

Months.	Amounts Drawn from the State Treasury during Fiscal Year ending June 30, 1880.	Amount of Deficiency for General Support of the Prison, for the Fiscal Year ending June 30, 1880.	Amounts Drawn from the State Treasury during Fiscal Year ending June 30, 1881.	Decrease in Drafts upon the State Treasury for present Fiscal Year.	Disbursements for Fiscal Year ending June 30, 1880.	Disbursements for Fiscal Year ending June 30, 1881.	Decrease for Fiscal Year ending June 30, 1881.
1880.							
July	$20,000 00	----------	----------	----------	$21,430 26	$4,665 54	----------
August	16,000 00	----------	----------	----------	21,878 10	8,309 64	----------
September	16,000 00	----------	$35,250 40	----------	23,073 80	41,380 43	----------
October	13,500 00	----------	19,864 10	----------	22,638 98	24,553 24	----------
November	12,000 00	----------	11,526 47	----------	16,309 61	20,857 76	----------
December	16,000 00	----------	18,436 94	----------	26,289 24	25,091 81	----------
1881.							
January	15,000 00	----------	13,276 41	----------	18,985 86	20,395 35	----------
February	13,250 00	----------	15,064 54	----------	17,629 61	20,207 94	----------
March	12,000 00	----------	15,000 00	----------	18,426 99	19,939 32	----------
April	----------	----------	35,300 00	----------	20,138 59	20,512 44	----------
May	----------	----------	431 30	----------	19,296 73	22,449 77	----------
June	----------	$55,902 46	----------	----------	25,657 93	22,229 06	----------
		$55,902 46					
		133,750 00					
Totals	$133,750 00	$189,652 46	$164,150 16	$25,502 30	$251,755 80	$250,592 30	$1,264 50

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REPORT OF THE TURNKEY

OF THE

California State Prison.

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TURNKEY'S REPORT.

SAN QUENTIN, June 30, 1881.

To Honorable J. P. Ames, Warden California State Prison, San Quentin, California:

DEAR SIR: I have the honor to submit to you, herewith, my report, in tabular statements, for the fiscal year ending June 30, 1881.

Very respectfully yours,

A. G. HINMAN, Turnkey.

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TABLE I.

Recapitulation of Received and Discharged Prisoners, from July 1, 1880, to July 1, 1881.

Months.	By Commitment	United States Prisoners Received	Returned Convict Witnesses	Escapes Recaptured	Returned with Additional Sentence on a New Charge	Returned, Writ of Habeas Corpus being denied	Returned to await Decision of the Court on a Writ of Habeas Corpus	Total Receipts	Discharged per Act, and Restored	Discharged per Act	Discharged by Order of Court	Taken out by Order of Court as Witnesses	Removed to Folsom Prison, by Order of the Board of State Prison Directors	Discharged by Commutation	Pardoned by the Governor	Pardoned by the President
1880.																
July	91		3					94	21	15		3	44	6	1	
August	50		1					51	29	10			52	1		
September	33							33	31	14		2	104	2	1	
October	42		4					46	50	19		2		1		
November	39		1	1		1		42	31	8		1		1		3
December	38		1		2			41	13	9		1	52	1		
1881.																
January	29	2	2	1			1	35	30	10	1	3	1		2	
February	39		2					41	22	13		1			2	
March	33	1	1					35	34	9		1				
April	52		6			1		59	18	19		6		1	1	
May	38	1						39	34	16				1		
June	41							41	23	26						
Totals	525	4	21	2	2	2	1	557	336	168	1	20	253	14	7	3

TABLE I—Continued.

Months.	Escaped	Died	Suicide	Killed	Sent to Insane Asylum	Taken out on a New Charge	Taken out on a Charge of Murder	Taken out by order of Court for a New Trial	Taken out on a Writ of Probable Cause	Taken out on Writ of Habeas Corpus	Discharged by Executive Release	Total Discharged	Number of Prisoners on Hand at the Close of Each Month.
1880.													
July	2	4						1	1			98	July, 1,511.
August	1	2									1	96	August, 1,466.
September								1				155	September, 1,344.
October	1	1		1				2				77	October, 1,313.
November	2	2					1	2		1		52	November, 1,303.
December		1				2		2				81	December, 1,263.
1881.													
January	1	1							1	1		51	January, 1,247.
February		1	1					2				42	February, 1,246.
March		4										48	March, 1,233.
April		1								1		47	April, 1,245.
May		2										53	May, 1,231.
June		2			1							52	June, 1,220.
Totals	7	21	1	1	1	2	1	10	2	3	1	852	Monthly average, 1,301 $\frac{19}{12}$.

NOTE.—Received, 557; discharged, 852. Decrease from July 1, 1880, to July 1, 1881, 295.

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TABLE II.

Nativity of Prisoners.

Nativity.	Number.	Per cent.	Nativity.	Number.	Per cent.
United States and Territories.			*Foreign.*		
Alabama	5	.42	Austria	4	.32
Arkansas	5	.42	Australia	7	.57
Alaska Territory	1	.08	China	232	19.01
California	215	17.62	Canada	21	1.72
Colorado	2	.16	Chili	5	.42
Connecticut	5	.42	Denmark	6	.50
Florida	5	.42	England	38	3.11
Georgia	6	.50	France	18	1.47
Illinois	24	1.96	Finland	2	.16
Indiana	14	1.14	Germany	57	4.67
Iowa	7	.57	Holland	3	.24
Kansas	3	.24	Ireland	89	7.29
Kentucky	14	1.14	Italy	10	.82
Louisiana	5	.42	Mexico	30	2.46
Maine	16	1.31	Nova Scotia	2	.16
Maryland	10	.82	New Brunswick	3	.24
Michigan	7	.57	Peru	2	.16
Massachusetts	40	3.28	Portugal	3	.24
Missouri	24	3.96	Poland	2	.16
Mississippi	1	.08	Russia	2	.16
New Hampshire	5	.42	South Ameriea	6	.50
New York	104	1.52	Sweden and Norway	6	.50
New Jersey	9	.73	Switzerland	4	.32
North Carolina	5	.42	Scotland	10	.82
Ohio	21	1.72	Spain	2	.16
Oregon	5	.42	Sandwich Islands	1	.08
Pennsylvania	28	2.29	Wales	2	.16
Rhode Island	6	.50	West Indies	5	.42
South Carolina	5	.42	At Sea	2	.16
Tennessee	11	.90	Totals	574	47.00
Texas	5	.42			
Vermont	5	.42	RECAPITULATION.		
Virginia	11	.90			
West Virginia	3	.24	United States	646	53.00
Wisconsin	7	.57	Foreign	574	47.00
District of Columbia	1	.08			
New Mexico	5	.42	Totals	1,220	100.00
Washington Territory	1	.08			
Totals	646	53.00			

TABLE III.

Classification of Crime.

Crime.	Number.	Crime.	Number.
Abduction	2	Embezzlement	10
Arson	3	Forgery	23
Arson, first degree	1	Felony	39
Arson, second degree	10	Grand larceny	227
Arson and burglary	1	Grand larceny and prior conviction	5
Attempt to commit arson	2	Housebreaking	1
Assault to murder	52	Incest	2
Assault to rape	8	Larceny	2
Assault to rob	15	Murder	8
Assault to do great bodily injury	1	Murder, first degree	80
Assault with deadly weapon	20	Murder, second degree	118
Attempt at burglary	16	Manslaughter	51
Burglary	54	Mayhem	1
Burglary, first degree	135	Perjury	5
Burglary, second degree	154	Petit larceny and prior conviction	8
Burglary and grand larceny	10	Rape	11
Burglary and prior conviction	10	Robbery	114
Buggery	3	Robbery and arson	3
Bigamy	3		
Counterfeiting	12	Totals	1,220

TABLE IV.

Terms of Imprisonment.

Term.	Number.	Term.	Number.
One year	62	Twelve years	23
One and one quarter years	4	Twelve and one half years	2
One and one half years	30	Thirteen years	9
Two years	105	Fourteen years	17
Two and one half years	24	Fifteen years	50
Three years	126	Seventeen years	4
Three and one half years	14	Eighteen years	6
Four years	92	Twenty years	20
Four and one quarter years	3	Twenty-one years	4
Four and one half years	14	Twenty-two years	3
Five years	156	Twenty-four years	3
Five and one half years	3	Twenty-five years	12
Six years	49	Twenty-eight years	2
Seven years	50	Thirty years	6
Seven and one half years	10	Forty years	2
Eight years	49	Forty-five years	2
Nine years	12	Life	124
Nine and one half years	2		
Ten years	121	Total	1,220
Eleven years	5		

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TABLE V.

Age of Prisoners.

Age.	Number.	Age.	Number.
Twelve years	2	Forty-two years	20
Thirteen years	2	Forty-three years	20
Fourteen years	3	Forty-four years	15
Fifteen years	3	Forty five years	15
Sixteen years	4	Forty-six years	10
Seventeen years	14	Forty-seven years	12
Eighteen years	15	Forty-eight years	8
Nineteen years	40	Forty-nine years	7
Twenty years	48	Fifty years	6
Twenty-one years	45	Fifty-one years	5
Twenty-two years	40	Fifty-two years	6
Twenty-three years	60	Fifty-three years	5
Twenty-four years	50	Fifty-four years	3
Twenty-five years	50	Fifty-five years	5
Twenty-six years	55	Fifty-six years	2
Twenty-seven years	40	Fifty-seven years	3
Twenty-eight years	45	Fifty-eight years	2
Twenty-nine years	66	Fifty-nine years	3
Thirty years	60	Sixty-one years	2
Thirty-one years	71	Sixty-two years	2
Thirty-two years	40	Sixty-three years	1
Thirty-three years	38	Sixty-four years	1
Thirty-four years	40	Sixty-five years	1
Thirty-five years	42	Sixty-six years	1
Thirty-six years	40	Sixty-seven years	1
Thirty-seven years	30	Seventy-two years	2
Thirty-eight years	25	Seventy-four years	1
Thirty-nine years	30	Seventy-eight years	1
Forty years	31		
Forty-one years	31	Total	1,220

Table V—Continued.

Educational Abilities of Prisoners.

Read and write	881
Read and cannot write	32
Neither read nor write	307
Total	1,220

TABLE VI.

Number of Prisoners from each County.

County.	Number.	Per Cent.	County.	Number.	Per Cent.
Alameda	75	6.14	San Bernardino	20	1.64
Amador	11	.90	San Diego	21	1.72
Butte	38	3.11	San Francisco	366	30.00
Calaveras	15	1.23	San Joaquin	55	4.50
Colusa	11	.90	San Luis Obispo	10	.82
Contra Costa	20	1.64	San Mateo	11	.90
Del Norte	4	.32	Santa Barbara	12	.98
El Dorado	11	.90	Santa Clara	60	4.83
Fresno	19	1.59	Santa Cruz	9	.73
Humboldt	11	.90	San Benito	7	.57
Inyo	7	.57	Shasta	20	1.64
Kern	35	2.85	Sierra	5	.42
Lake	5	.42	Siskiyou	12	.98
Lassen	1	.08	Solano	19	1.59
Los Angeles	56	4.59	Sonoma	33	2.70
Marin	6	.50	Stanislaus	15	1.23
Mariposa	6	.50	Sutter	4	.32
Mendocino	9	.73	Tehama	16	1.31
Merced	15	1.23	Trinity	1	.08
Mono	4	.32	Tulare	12	.98
Monterey	19	1.59	Tuolumne	11	.90
Nevada	19	1.59	Ventura	8	.65
Napa	15	1.23	Yuba	18	1.47
Placer	19	1.59	Yolo	10	.82
Plumas	4	.32			
Sacramento	30	2.46	Totals	1,220	100.00

Table VI—Continued.

Number of Terms.

Prisoners serving their first term	931
Prisoners serving their second term	188
Prisoners serving their third term	62
Prisoners serving their fourth term	23
Prisoners serving their fifth term	8
Prisoners serving their sixth term	6
Prisoners serving their seventh term	2
Total	1,220

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TABLE VII.

Occupation of Prisoners when Received.

Occupation.	Number.	Occupation.	Number.
Bookbinder	1	Molder	4
Baker	8	Miner	41
Brickmaker	5	Watchmaker	1
Bricklayer	2	Merchant	2
Bookkeeper	8	Miller	1
Barkeeper	1	Marble cutter	2
Barber	21	Machinist	6
Blacksmith	12	Musician	4
Brushmaker	1	Printer	8
Butcher	23	Plumber	3
Cook	95	Potter	1
Carver	1	Plasterer	4
Caulker	1	Painter	12
Cutler	1	Physician	2
Carpenter	21	Photographer	1
Cigarmaker	8	Railroad employé	4
Clerk	14	Ship carpenter	2
Confectioner	1	Sashmaker	2
Cabinetmaker	6	Seamstress	1
Cooper	6	School teacher	2
Civil Engineer	1	Stonemason	1
Domestic	9	Sailor	21
Druggist	2	Steward	1
Dentist	2	Servant	3
Dairyman	2	Stonecutter	1
Dyer	2	Saloon keeper	2
Engineer	8	Salesman	1
Farmer	46	Shoemaker	22
Fisherman	1	Sea Captain	1
Filecutter	1	Sailmaker	3
Florist	1	Sodamaker	1
Fireman	1	Turner	1
Gardener	6	Teamster	27
Gasfitter	2	Tobacconist	1
Glassblower	1	Tailor	15
Gunsmith	1	Telegraph operator	2
Grocer	1	Tinsmith	6
Harnessmaker	13	Trunkmaker	1
Hostler	14	Tanner	1
Herder	2	Upholsterer	5
Horseshoer	2	Vaquero	17
Hack driver	1	Veterinary Surgeon	2
Ironer	1	Washman	47
Laborer	552	Wheelwright	1
Lather	1	Waiter	14
Locksmith	2	Watchman	1
Lithographer	1	Wireworker	1
Laundryman	2	Woodsman	1
Lumberman	2		
Lady of easy virtue	1	Total	1,220

TABLE VIII.

Statement of Clothing, etc., Issued to Prisoners by Turnkey's Department, from July 1, 1880, to July 1, 1881.

Date.	Woolen Pants.	Woolen Shirts.	Hickory Shirts.	Shoes.	Hats.	Blankets.	Yards of Bed Ticking.	Boots, Shoes to Order.	Repairs, Boots, Shoes.
1880.									
July	349	347	51	250	168	120	322⅜	15	84
August	270	248	35	220	148	16	679½	20	107
September	192	173	44	149	104	5	----------	8	49
October	256	241	48	203	113	3	----------	13	71
November	186	198	30	170	120	2	----------	10	54
December	178	166	15	202	65	----------	----------	21	67
1881.									
January	176	156	22	200	85	----------	14	22	61
February	230	217	18	186	74	14	----------	15	52
March	184	180	31	135	93	13	----------	11	75
April	275	254	32	198	137	49	213¼	11	48
May	230	209	28	173	116	24	111	14	50
June	207	190	23	166	108	8	115	9	39
Totals	2,733	2,579	377	2,252	1,331	254	1,455½	169	757

NOTE.—Issued during the year—27 knit jackets, and 69 blanket coats; issued to prisoners upon their discharge from the prison, and made to order—304 coats, 313 vests, and 306 pants.

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REPORT OF THE PHYSICIAN

OF THE

California State Prison.

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PHYSICIAN'S REPORT.

To Hon. J. P. Ames, Warden:

DEAR SIR: Having taken charge of the hospital department at the close of the last fiscal year, I am able to submit to you only a compiled report from the records of my predecessor. I found the sanitary condition of the prison good; the beds and building of hospital clean and comfortable; the sewerage excellent; the food of the prisoners substantial and wholesome; and the whole disciplinary system evincing scrupulous hygienic attention; and to those admirable conditions, still obtaining, must be attributed, to a great extent, the present remarkably good health of the prisoners.

DISEASES.

Disease.	Number.	Disease.	Number.
Asthma	17	Herpes	4
Abscess	13	Indigestion	45
Anæmia	3	Influenza	74
Ascarides	7	Insanity	5
Burns	4	Jaundice	1
Bronchitis	8	Lumbago	23
Constipation	68	Neuralgia	45
Catarrh	21	Necrosis	10
Cerebral congestion	1	Ophthalmia	25
Contusions and sprains	40	Poison oak	9
Carbuncle	1	Polypus (nasal)	2
Diarrhœa	111	Pneumonia	8
Dysentery	16	Phthisis, pulmonary	10
Dyspepsia	13	Periostitis	3
Debility	31	Paralysis	4
Dropsy	1	Rheumatism	73
Enteritis	3	Stricture	7
Entozoa	3	Syphilis	21
Epilepsy	4	Scrofula	14
Eczema	12	Sciatica	1
Fever, intermittent	38	Suicide (by opium)	1
Fistula	3	Tæsnia solium	1
Gonorrhœa	10	Tonsilitis	7
Hernia	12	Varicose veins	3
Hemorrhoids	11	Wounds, incised	15
Hydrocele	1	Wounds, lacerated	38
Haemoptysis	5	Wounds, punctured	9
Classsified diseases			915
Unclassified diseases			644
Total			1,559

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DEATHS.

Nativity.	Date.	Causes of Deaths.
Mexico	July 2, 1880	Phthisis pulmonalis.
China	July 12, 1880	Pneumonia.
Indian	July 16, 1880	Pneumonia.
America	July 26, 1880	Rheumatism.
America	August 5, 1880	Laryngeal Phthisis.
America	August 15, 1880	Typhoid malarial.
China	October 6, 1880	Incised wounds.
Mexico	October 6, 1880	Phthisis pulmonalis.
Indian	November 9, 1880	Scrofula.
Ireland	November 21, 1880	Phthisis pulmonalis.
China	December 7, 1880	Phthisis pulmonalis.
Mexico	January 23, 1881	Enteritis.
Germany	February 22, 1881	Phthisis pulmonalis.
China	February 24, 1881	Suicide (by taking opium).
America	March 14, 1881	Epilepsy.
China	March 14, 1881	Cerebral congestion.
China	March 24, 1881	Scrofula.
Mexico	March 28, 1881	Phthisis pulmonalis.
Mexico	April 2, 1881	Phthisis pulmonalis.
Mexico	May 13, 1881	Congestion of the lungs.
America	May 24, 1881	Pneumonia.
Germany	June 10, 1881	Phthisis pulmonalis.
Mexico	June 21, 1881	Phthisis pulmonalis.

Total number of deaths, 23.

RECAPITULATION OF CAUSES OF DEATHS.

Cerebral congestion	1
Congestion of the lungs	1
Enteritis	1
Epilepsy	1
Laryngeal phthisis	1
Phthisis pulmonalis	9
Pneumonia	3
Rheumatism	1
Scrofula	2
Suicide (by taking opium)	1
Typhoid malarial	1
Wounds incised	1
Total	23

Number of prescriptions filled, 4450; daily average, 12⅛. Number of sick treated in cells, 1002; daily average, 2⅝. Number in hospital July 1, 1880, 15; number admitted into hospital, 59; number discharged from hospital, 40; number of deaths, 23; number in hospital June 30, 1881, 11.

N. J. BIRD, M. D.,
Resident Physician.

REPORT OF THE MORAL INSTRUCTOR

OF THE

California State Prison.

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REPORT OF THE MORAL INSTRUCTOR.

CALIFORNIA STATE PRISON, SAN QUENTIN, July 1, 1881.

Honorable J. P. Ames, Warden:

DEAR SIR: In submitting the following report from this department for the fiscal year ending June 30, 1881, it is proper to state, that as I only entered upon the duties of this office the first of this present month, I have been obliged to rely entirely upon the monthly reports submitted by my predecessor.

My connection with the prison is too recent to justify any comments or recommendations on my part, and I therefore content myself with simply submitting the annexed statements.

There were 2,559 books in the library on the first day of July, 1880. It appears by the previous annual report that there were 3,703 volumes at the close of the year. The discrepancy between the two numbers is explained by the fact, that on the first of July, 1880, the library was thoroughly overhauled, and about 1,200 books condemned, because they were so dilapidated as to be of no use. There have been 505 additions during the year, and the present number upon the shelves is 3,063, showing a net loss of only one volume during the year.

The library department has received as donations during the year from parties outside, 9,960 old newspapers, and 1,079 magazines and pamphlets. Most of these last have been bound and placed in the library. The number of volumes drawn from the library by the prisoners during the year has been 13,651, being an average of about 1,140 per month. There are about 300 school books on hand.

The bindery department is under the charge of one of the prisoners, who attends to his duty faithfully, and does very good work. The number of volumes bound during the year has been 518, not including some 300 copy-books, of which no special record is made.

The number of boys in the school during the several months has been as follows: July, 1880, 49; August, 46; September, 24; October, 25; November, 25; December, 27; January, 1881, 25; February, 33; March, 24; April, 18; May, 17; and June, 11. The decrease is partly accounted for by the discharge and pardon of the boys, but mainly from the fact, that very wisely and judiciously, in my opinion, you have placed a majority of the boys under sixteen in the workshops, at occupations suitable to their age and condition. The undersigned believes that the best place for the most of them is the shop. He would venture to recommend, however, if consistent with the welfare and discipline of the prison, and of the boys, that all of those under the aforementioned age who are now employed in the shops should be permitted to remain in the chapel after divine service on

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Sundays, after twelve o'clock, there to be taught as if in the daily school.

There are employed in this department besides the Moral Instructor, two assistant librarians, one bookbinder, one teacher, one doorkeeper, and one janitor, all the assistants named being from among the prisoners; and according to the observation of the undersigned, all discharge their duties faithfully.

Respectfully yours,

WM. H. HILL,
Moral Instructor.

REPORT OF THE WARDEN

OF THE

State Prison at Folsom.

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REPORT OF WARDEN.

STATE PRISON AT FOLSOM, June 30, 1881.

To the Hon. Board of Prison Directors, State of California:

GENTLEMEN: I have the honor to present herewith my report of the operation and management of the State Prison at Folsom from the thirty-first of October, 1880, to present date. In my last report there appeared a detailed statement of the portion expended to that time of the special appropriation of $40,000 made by the Legislature for the purpose of completing the prison building. The amount so accounted for by that report was $24,964 34. There have since been expended $15,035 66, the remainder of the fund. The items of expenditure appear in the Clerk's report accompanying herewith. I find on segregating these items that there were expended on:

Prison building		$32,458 69
Wooden buildings	$1,869 81	
Artesian well	527 30	
Union gas machine	2,150 00	
Railroad iron	1,194 20	
Reservoir	1,800 00	
		$7,541 31
		$40,000 00

I recommend that this amount of $7,541 31 be transferred and paid back to the Building Fund out of the general appropriation, as the items do not seem to properly belong to the completion of the prison building, and the money is needed for its actual completion. At the time your honorable Board took charge of the State Prison affairs, there had been expended on this prison $286,154 68; the balance of the Branch Prison fund, expended under your directions, $9,145 32; special appropriation for prison building, $40,000 00; there have been expended to date for items other than maintaining cost out of general appropriation, $25,486 32; total investment to date, $360,786 32.

As the work has advanced I have, as rapidly as possible, dispensed with hired labor. It is now about a minimum, my labor pay roll for this month being only $265 50, and I expect to make further reduction soon. As many prisoners as possible have been employed on the building. There being no opportunity for disposing of the labor for remuneration, I have kept those not occupied on the building, at work on outside improvements. The large stone sewer north of building is being built as rapidly as possible. I expect to have it completed to the river by first of December next. Commodi-

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ous carpenter, blacksmith, and other necessary shops have been built. A much needed improvement—a good wagon road to the prison—has been constructed. Counting prison labor at fifty cents per day, the road cost for labor, $750; add for lumber, $194; total, $944.

There were handled in its construction 10,000 yards of earth and rock. By contract, with free labor, the road would have cost $2,500, exclusive of bridges and culverts. This difference of $1,750 in labor shows that prisoners' labor will approximate free labor in value. I have now a large force at work opening a quarry on the north side of the gulch, near the prison building. This will furnish rock for the stone sewer, and when the quarry is developed by the removal of earth and other debris we can furnish an unlimited amount of granite for sale, as the supply close at hand is practically inexhaustible. As there appears to be no immediate prospect of employing the prisoners at any labor that will create a revenue, I propose to continue the improvements I have in view. I wish to fill the ravine in the front of the prison, raising the hill railroad track to a proper grade, so that easy access can be had to the prison building from the main road. I wish to continue this road eastward past the prison, thus making a complete loop around the mountain. This will not only make a fine drive-way, but will serve as a means, by properly ditching the road, to carry away from the prison the flow of water that is simply immense during the rainy season. I propose to make an excavation in the high ground near the engine house, and build therein a house of sufficient dimensions to hold our fuel. The earth taken from the extension of the road and the excavation referred to can be utilized in the filling to be made in front of the prison. The stone sewer is to be completed, the gulch filled to grade over the sewer, and the stone quarry to be opened. This proposed labor cannot be said to be profitless, as it will add materially to the value of the property of the State.

The accompanying report of the Prison Clerk explains in complete form the state of our finances.

The Physician's statement is gratifying, as it shows a very small percentage of our total number on the sick list.

Respectfully yours,

THOS. C. POCKMAN,
Warden.

REPORT OF THE CLERK

OF THE

State Prison at Folsom.

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CLERK'S REPORT.

TABLE ONE.

Property Received from former Board of Directors.

Items.	Amounts.
Prison Building	$275,000 00
1. Derricks and Fixtures	4,305 00
2. Machinery	3,109 57
3. Tools	1,660 96
4. Pipes and Fittings	101 11
5. Merchandise	223 69
6. Railroad material	509 81
7. Wooden buildings	829 54
8. Live stock	375 00
9. Harness	10 00
10. Furniture	30 00
Total	$286,154 68

NOTE.—Items numbered 1 to 10 are entered at their present valuation. The difference between that and their original cost forms part of the amount charged to prison building.

TABLE TWO.

Value and Position of Real Estate.

Property.	Value.	Amount paid.
Real Estate	$15,000 00	
To Natoma Water and Mining Company		$15,000 00

TABLE THREE.

Statement Old Fund Folsom Branch Prison.

Date.	Source and Purpose.	Received.	Paid.
1880.			
February 26	Received from State treasury	$5,822 36	
February 26	Paid W. Gutenberger, iron work		$3,807 00
February 26	Paid Terrill & Slaven, wood work		1,202 36
February 26	Paid Whittier, Fuller & Co., paints		613 00
February 26	Paid J. W. Duncan, salary, Superintendent		200 00
March 3	Received from State treasury	346 50	
March 3	Paid J. J. Gleason, plumbing		346 50
March 18	Received from State treasury	1,302 87	
March 18	Paid J. W. Duncan, salary, Superintendent		300 00
March 18	Paid J. J. Gleason, plumbing		541 72
March 18	Paid labor and merchandise		461 15
April 28	Received from State treasury	607 07	
April 28	Paid labor		291 62
April 28	Paid T. C. Pockman, salary, Superintendent		300 00
April 28	Paid merchandise		16 95
April 28	Paid lumber		8 50
June 10	Received from State treasury	1,056 52	
June 10	Paid J. W. Duncan, services adjusting old claims		45 00
June 10	Paid J. J. Gleason, on his claim of $1,150		145 93
June 10	Paid W. Gutenberger & Co., on their claim of $5,615 40.		712 59
June 10	Paid same, on their claim of $1,200		153 00
	Totals	$9,145 32	$9,145 32

TABLE FOUR.

Statement of Present Construction Fund.

Purpose.	Paid Out.	Received.
By appropriation		$40,000 00
Labor pay rolls	$13,412 00	
Plumbing	3,937 21	
Union gas machine	2,150 00	
Hardware	1,121 83	
Blacksmithing	89 63	
Iron and iron work	1,141 86	
Castings	85 05	
Gongs, bells, and fixtures	67 50	
Nails	154 55	
Zinc ventilators	115 50	
Cement	5,341 25	
Lime	831 95	
Plaster paris and white sand	135 00	
Hair	71 40	
Paints, oils, etc.	756 47	
Sewer pipes and tiles	880 67	
Fire brick and clay	34 00	
Brick	196 80	
Cement floor—contract	396 00	
Baking oven—contract	203 00	
Plastering—contract	220 50	
Cooking vats and tables	230 00	
Lumber	2,898 03	
Lath	444 30	
Shingles and shakes	157 41	
Charcoal and coal	119 35	
Drayage and livery	58 50	
Freight	1,348 02	
Telegraphing	9 00	
Wooden buildings	800 00	
A. A. Cook, architect	412 00	
Interest	481 64	
Vault front	275 00	
Railroad iron	1,194 20	
Marble mantels and fireplaces	641 00	
Artesian well	52 80	
	$40,463 42	
Less sales of material	463 42	
Totals	$40,000 00	$40,000 00

TABLE FIVE.

Cost of prison building to June 30, 1881 ..... $321,654 27

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TABLE SIX.

Exhibit of the Cost of Maintaining Prisoners at the State Prison, at Folsom, for the Fiscal Year ending June 30, 1881.

Months.	Subsistence.	Commutation Subsistence.	Forage.	Clothing.	Shoes.	Bedding.	Light.	Medicines.	Postage.	Stationery.	Fuel.
July (5 days), 1880	$86 60		$49 58			$9 05			$6 12	$7 50	$43 00
August, 1880	798 55	$52 55	74 65	$58 65	$22 00	641 97	$201 01	$363 98	1 50	25 51	244 25
September, 1880	945 02	70 00	23 55	251 20	94 67	403 10	48	1 48	19 22	2 01	74 75
October, 1880	1,153 22	150 00	73 84	130 78	42 44	690 21	5 67	123 52		8 97	120 61
November, 1880	1,161 14	20 00	69 95	283 84	107 17	208 75	432 59	117 35	5 40	3 11	178 50
December, 1880	1,456 79	20 00	114 92	188 50	140 25	1,566 25	113 18	136 48	19 42	89 64	319 25
January, 1881	1,168 21	20 00	90 02	64 13	96 85	289 78	113 32	104 24	9 50	9 91	338 50
February, 1881	1,362 95	120 00	113 73	386 44	98 67	102 86	89 81	76 03	12 59	2 60	220 31
March, 1881	1,521 05	20 00	56 12	191 89	108 90	48 16	82 30	99 32	7 69	6 90	105 75
April, 1881	1,541 04	20 00	30 73	122 47	106 57	36 80	237 38	9 48	90	3 52	110 00
May, 1881	1,531 06	20 00	138 65	236 84	133 90	3 20	29 93	32 55	15 00	9 36	110 00
June, 1881	1,444 67	20 00	59 67	113 43	209 16	5 07	256 69	116 91	11 06	38 96	279 80
Totals	$14,170 30	$532 55	$895 41	$2,028 17	$1,160 58	$4,005 20	$1,562 36	$1,181 34	$108 40	$207 99	$2,144 72

Table Six—Continued.

Months.	Freight.	General Use.	Expense.	Salary.	Transp'tn of Prisoners from San Quentin.	Discharged Prisoners.	Labor Pay-roll.	Total Cost Per Month.	Average No. Prisoners.	Average Cost Per Capita Per Day.
July (5 days), 1880		$95 23	$23 00	$475 42				$795 50	44	$3 61
August, 1880	$36 57	267 20	53 40	2,006 88	$271 95			5,120 62	70	2 36
September, 1880	247 47	198 61	37 85	2,077 35	359 35			4,806 11	153	1 04
October, 1880	81 50	210 57	25 50	2,115 74	134 40	$6 00		5,072 97	209	0 78
November, 1880	264 83	163 01	61 50	2,096 67	31 40	10 00		5,215 21	209	0 83
December, 1880	208 21	308 36	52 39	2,137 81	222 30	5 00		7,098 75	274	0 83
January, 1881	127 61	237 17	21 00	2,193 18	136 80	56 00		5,076 22	292	0 56
February, 1881	120 65	154 59	70 25	2,239 95		9 00		5,180 43	296	0 62
March, 1881	246 73	255 65	102 36	2,240 00		22 00		5,114 82	303	0 54
April, 1881	221 21	235 65	136 60	2,233 16	106 00	96 00		5,247 51	303	0 56
May, 1881	222 31	230 29	42 00	2,174 39		76 00	$156 00	5,161 48	295	0 56
June, 1881	159 16	401 99	42 75	2,069 67		92 00	105 00	5,425 99	297	0 61
Totals	$1,936 25	$2,758 32	$668 60	$24,060 22	$1,262 20	$372 00	$261 00	$59,315 61	228	$1 07
Less credit—laundry profit								13 11		
								$59,302 50		

TABLE SEVEN.

Expenditures other than Maintaining Cost.

Months.	Wagons and Harness.	Furniture, Crockery, etc.	Tools.	Ordnance.	Wooden Buildings.	Building Fund, new account.	Machinery.
July (5 days), 1880		$554 49					
August, 1880	$25 00	2,045 94	$258 79	$727 30	$150 00		
September, 1880	55 00	1,252 82	124 24	1,128 65			
October, 1880		311 22	300 61	145 50			$2,075 45
November, 1880	41 00	560 06	41 58	37 65			316 30
December, 1880	249 08	578 78	119 71				167 43
January, 1881	22 37	87 88	84 67	29 65			18 00
February, 1881		391 46	51 31			$1,045 04	3 22
March, 1881		1,072 39	284 37			720 70	14 10
April, 1881		250 18	39 69	16 10	382 33	766 23	7 80
May, 1881	6 33	94 47	24 46		186 89	1,744 50	4 49
June, 1881		474 08	47 75		50 30	350 96	
Totals	$398 78	$7,673 77	$1,368 18	$2,084 85	$769 52	$4,627 43	$2,606 79

Table Seven—Continued.

Months.	Discount on State Treasury Warrants.	Pipes and Fittings.	Live Stock.	Telephone Line.	Prison Improvements.	Artesian Well.	Quarry.	Totals.
July (5 days), 1880								$554 49
August, 1880								3,207 03
September, 1880	$250 76							2,811 47
October, 1880	228 86	$1,702 04	$135 00	$350 00				5,248 68
November, 1880	88 86	22 67						1,108 12
December, 1880	62 20							1,168 20
January, 1881			190 00					432 57
February, 1881								1,491 03
March, 1881		55 95						2,147 51
April, 1881	457 70				92 55			2,012 58
May, 1881	519 68				167 45	241 50		2,989 77
June, 1881	326 50				123 18	66 00	32 75	1,471 52
Totals	$1,934 56	$1,780 67	$325 00	$350 00	$383 18	$307 50	$32 75	$24,642 97

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TABLE EIGHT.

Aggregate Expenditures.

1880.	July, 5 days.	August.	September.	October.	November.	December.
Maintaining cost	$795 50	$5,120 62	$4,806 11	$5,072 97	$5,215 21	$7,098 75
Other than maintaining cost.	554 49	3,207 03	2,811 47	5,248 68	1,108 12	1,168 20
	$1,349 99	$8,327 65	$7,617 58	$10,321 65	$6,323 33	$8,266 95

TABLE EIGHT—Continued.

1881.	January.	February.	March.	April.	May.	June.	Total.
Maintaining cost	$5,076 22	$5,180 43	$5,114 82	$5,247 51	$5,161 48	$5,425 99	$59,315 61 *13 11
Other than maintaining cost	432 57	1,491 03	2,147 51	2,012 58	2,989 77	1,471 52	$59,302 50 24,642 97
	$5,508 79	$6,671 46	$7,262 33	$7,260 09	$8,151 25	$6,897 51	$83,945 47

*Laundry profit.

TABLE NINE.

Cash Statement to June 30, 1881.

Source and Purpose.	Received.	Paid out.
Received of State Treasury, account Branch Prison Fund	$9,145 32	
Received of State Treasury, account General Appropriation	86,723 38	
Received of State Treasury, account Construction Fund	40,000 00	
Received for sales, account Construction Fund	463 42	
Received for sales, account Commissary	3,618 34	
Received for sales, account clothing	14 75	
Received for sales, account shoes	68 55	
Received for sales, account tools	8 00	
Received for sales, account merchandise, old iron, etc.	111 52	
Received for subsistence	85 00	
Received for labor	2 50	
Received for horse shoeing	3 50	
Received for washing	51 18	
Received for credit, account Natoma Water and Mining Company	33 75	
Total	$140,329 21	
Paid for labor and material, account Branch Prison Fund		$9,145 32
Paid for labor, material, etc., account Construction Fund		40,463 42
Paid for labor, account artesian well and prison improvements		1,005 75
Paid for salaries		21,818 30
Paid for salaries extra service		134 25
Paid for merchandise, account Commissary		57,508 49
Paid for freight, account Commissary		1,936 25
Paid for discount on State Treasury Warrants		1,934 56
Paid for commutation subsistence		512 55
Paid for wooden buildings		960 00
Paid for expense		254 60
Paid for furniture		28 30
Paid for live stock		25 00
Paid for transportation of prisoners from San Quentin		1,124 80
Paid to discharged prisoners		372 00
Total		$137,223 59
Cash on hand		3,105 62
	$140,329 21	$140,329 21

REPORT OF THE PHYSICIAN

OF THE

State Prison at Folsom.

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REPORT OF PHYSICIAN.

To T. C. Pockman, Warden of the State Prison, Folsom, California:

In submitting for your consideration my annual report of the medical department of the State Prison at Folsom, I trust that it will not be out of place for me to briefly refer to the condition of the prison as I found it on the last of July, 1880, one year since.

As I was not at the prison until the twenty-ninth of July, and as no medical business was transacted until the first of August, my first quarterly report, therefore, embraced only the months of August, September and October, during which time we received two hundred prisoners from San Quentin, and ten by commitment, making two hundred and ten in all.

Of those received from San Quentin, many were men far advanced in life, whose constitutions had been greatly impaired by previous habits, long and repeated confinement, hard labor, etc.; while many of the younger portion were suffering from functional or organic diseases, and such pernicious habits as are usually contracted during prison life. They were set at work in the hot sun, during the most unhealthy season of the year, and being unacclimated and unaccustomed to the work required of them, and as the prison was unfinished, and the necessary accommodations for the proper care of the sick exceedingly limited, the inevitable result was that a larger amount of sickness prevailed, in proportion to the population, than would have occurred under other and more favorable circumstances.

But during the last eight months of the fiscal year, ending July 1, 1881, through the energy and perseverance of the Board of Directors, Warden, and other officers, the prison has been finished and many valuable improvements added thereto, which have greatly improved the comfort, as well as the sanitary condition of the institution.

Among the most prominent of these improvements, I beg leave to refer only to such as I believe to have had a salutary effect upon the health of those who have come under my daily care and observation.

As one of the most important subjects treated upon in sanitary science, is cleanliness, and is, as it were, the keynote of hygiene, I cannot omit, therefore, mentioning the great advantage we have realized in maintaining at all times the utmost cleanliness in all the details of prison life. The swimming-bath has been a most useful sanitary measure, supplied as it is with water heated by steam, and of sufficient capacity to afford ample opportunity for all to bathe as often as may be deemed necessary.

The alleys in the prison yard, of over fourteen hundred feet in length by ten in breadth, together with the floors of the dining-rooms, kitchen, etc., have been sewered and covered with a patent cement pavement, rendering them dry, cleanly, and comfortable.

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The culinary department has also been greatly improved, especially since the change in the mode of furnishing the meat and other supplies, and from frequent visits to the kitchen and dining-room, and a constant observation, I can safely report that the provisions furnished are ample in quantity, excellent in quality, and well cooked, and that complaints in this department are of rare occurrence.

I am also happy to report that my efforts in suppressing the habit of using opium, in any of its forms, have been attended with marked success, and now very few receive it, or ask for it. This desirable result would have been attained much sooner, and the habit under much greater control, had it not been for the clandestine introduction of the drug by some person, or persons, unknown to the officers of the prison.

During the larger portion of the year we were obliged to attend upon the sick in their cells, and hence were unable to make a strictly correct list of what might have been termed hospital patients, and, as a matter of course, it was impossible to give that care and attention to the sick which in many cases might have been desired; but that difficulty is now fully remedied, as we now have a large, convenient, and comfortable hospital and dispensary, and expect to be able in the future to give to each one all the attention their cases may demand.

These sanitary measures (which have been enumerated), in conjunction with plenty of out-door exercise, in a climate which has thus far proved most favorable for the location of a penal institution, have had a tendency to improve the vigor and health of all who have come under my care, and the result has been that those who came here with haggard countenances, broken down in spirits, and a craving for either opium or some stimulating substitute, are now well nourished, cheerful, and, comparatively speaking, contented, and in pursuing their daily duties have less interruptions on account of sickness than any similar number of free men would have, while engaged in like occupations.

As the hospital and dispensary were not finished until the last month of the fiscal year, I am unable, as I have mentioned before in this report, to give a complete list of those who might have been considered hospital patients; but notwithstanding these serious hindrances to a proper and effective treatment, I am happy to say that the percentage of deaths to population has been remarkably small, in comparison with other similar institutions, and that no death has occurred during the year from any cause incident to, or in any way pertaining to the climate, soil, or locality of the place, but from casualties, and chronic constitutional and organic diseases, contracted before coming to this place.

The following tables will show the diseases and deaths which have occurred during the year, from August 1, 1880, to July 1, 1881.

Table No. 1 has been repeated, and was embraced in my first quarterly report of August, September, and October, 1880.

Table No. 2 contains a list of all the diseases which have occurred from November 1, 1880, to July 1, 1881, the close of the fiscal year.

Table No. 3 contains a list of all the deaths which have occurred during the fiscal year ending July 1, 1881, with causes, percentage to population, etc.

Under the head of unclassified diseases, in Tables Nos. 1 and 2, it

is intended to represent the numerous ills to which prisoners are liable, and which require no particular treatment further than temporary relief. They are not usually excused from duty, and though the same person may make frequent calls at the office, yet they cannot safely be dispensed with, as it is the most expeditious mode of supplying their temporary wants.

In conclusion, I desire to express my thanks to the Board of State Prison Directors, Warden, and other officers of the prison, for their hearty support in all measures for the improvement of the medical department of the institution, and for their uniform courtesy and kindness to me during the year.

All of which is most respectfully submitted.

W. A. GROVER, M. D.,

Surgeon and Physician of the State Prison at Folsom, Cal.

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TABLE No. 1.

Quarterly Report of Prevalent Diseases Embracing August, September, and October of 1880.

Diseases.	Number.	Diseases.	Number.
Abscess in superior maxillary bone	1	Inflammation of ear	5
Aneurism	2	Inflammation of eye	4
Asthma	3	Insomnia	5
Bronchial consumption	1	Lumbago	7
Bronchitis	28	Meningitis	1
Catarrh	11	Nervous derangement	2
Contusions, sprains, and wounds	37	Neuralgia	4
Diarrhea	80	Paralysis	4
Diseases of brain	5	Partial insanity	2
Disease of kidneys	5	Pleuritis	3
Disease of heart	6	Poison oak	7
Disease of scalp	1	Polypus, nasal	1
Dysentery	1	Rheumatism	4
Dyspepsia	4	Sciatica	3
Fever and ague	60	Secondary syphilis	1
Gleet	1	Seminal weakness	10
Hemorrhoids	5	Stricture	2
Hernia	6	Tonsilitis	2
Indolent ulcer	4	Unclassified diseases*	610

*Unclassified diseases include all such cases as require a prescription, and medicine which is usually taken at the office or dispensary, and do not usually require any further treatment.

TABLE No. 2.

Embracing the last eight months of the Fiscal Year ending July 1, 1881.

Diseases.	Number.	Diseases.	Number.
Abscess	3	Hemorrhoids	15
Abdominal dropsy	1	Hernia	7
Abscess in superior maxillary bone	1	Hemorrhage from lungs	4
Aneurism	1	Inflammation of bladder	5
Ascarides	2	Inflammation of ear	11
Asthma	4	Inflammation of eye	12
Bilious fever	1	Indolent ulcers	4
Bilious colic	40	Insomnia	8
Bilious	8	Irritable heart	7
Bronchitis	6	Influenza	23
Bronchial consumption	2	Lepra	1
Burns	4	Lumbago	5
Buboes	3	Meningitis	1
Catarrh	18	Neuralgia	10
Contusions, sprains, and bruises	61	Orchitis	4
Chancre	4	Partial paralysis	5
Coughs	100	Partial insanity	7
Constipation	15	Polypus, nasal	1
Diarrhea, chronic	10	Pharyngitis	12
Diarrhea	80	Pleuritis	10
Disease of brain	2	Poison oak	19
Disease of heart	6	Pneumonia	4
Disease of liver (chronic)	2	Rheumatism, chronic and acute	30
Disease of kidneys	7	Secondary syphilis	8
Disease of scalp (chronic)	1	Seminal weakness	4
Dysentery	2	Sciatica	5
Dyspepsia	2	Stricture of urethra	3
Emphysema	3	Suicides and casualties, etc.	1
Epilepsy	3	Suicide (attempt at)	2
Fever and ague	60	Skin disease	1
Gonorrhea	1	Tonsilitis	10
Gleet	1	Unclassified diseases*	1,400
Gastralgia	24		

* Under the head of Unclassified Diseases it is intended to include all of the numerous calls for temporary relief, for either real, or fancied ills, some of which do not require any other treatment, except such as may be given at the time in the office.

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TABLE No. 3.

Months.	Cause of Death.	Number.
1880.		
August	None	
September	None	
October	None	
November	Bronchial consumption	1
November 22	Killed while attempting to escape*	1
December	None	
1881.		
January 3	Suicide by hanging*	1
February	None	
March	None	
April	None	
May 15	Disease of kidneys	1
May 22	Bronchial inflammation and general debility	1
June	None	
	Whole number of deaths	5

Total number of deaths from natural causes from August 1, 1880, to August 1, 1881	3
Total average population	241
Percentage of deaths to population	1.24

Those marked with * not counted in the percentage.

It will be seen from the above table that no deaths occurred during August, September, October, and December, of 1880, and none during February, March, April, and June, of 1881. The whole number of deaths during the year were five; of these, two were casualties not under our control; of the other three, two died from chronic diseases contracted long before coming to this place, and the one remaining died from a disease contracted while in solitary confinement.

THIRD ANNUAL REPORT

OF THE

STATE BOARD OF PRISON DIRECTORS

OF THE

STATE OF CALIFORNIA,

For the Thirty-third Fiscal Year, ending June 30, 1882.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1882.

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STATE BOARD OF PRISON DIRECTORS.

GEORGE W. SCHELL, President	Modesto.
W. F. McNUTT, M. D.	San Francisco.
A. H. CHAPMAN	Chico.
CHARLES CLAYTON	San Francisco.
JACOB H. NEFF	Colfax.

OFFICERS OF THE SAN QUENTIN PRISON.

J. P. AMES	Warden.
J. V. ELLIS	Clerk.
REV. W. H. HILL	Moral Instructor.
N. J. BIRD, M. D.	Physician.

OFFICERS OF THE FOLSOM PRISON.

GENERAL JOHN McCOMB	Warden.
J. M. MINER	Clerk.
W. A. GROVER, M. D.	Physician.

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REPORT.

To his Excellency GEO. C. PERKINS, *Governor of the State of California:*

The Directors of the State Prisons have the honor to submit to you their third annual report, for the fiscal year ending June 30, 1882. The reports of the Wardens, with the officers of the various departments of the San Quentin and Folsom Prisons, you will find appended, which will show a detailed statement of the affairs of both prisons.

It is with no little feelings of pride and gratification that we are able to state to your Excellency that never in the history of our State has the whole management of our prisoners and the financial conditions of the prisons been so satisfactory.

We believe that at no distant day the San Quentin Prison will be nearly, if not wholly, self-sustaining. The already great reduction in the running expenses of the prison is not entirely, however, due to our improved system of labor. Very much has been done in reducing the maintaining cost per capita of the prisoners; for instance, the daily maintaining cost per capita was:

For the years ending June 30, 1873	53½ cents.
For the years ending June 30, 1875	44 cents.
For the years ending June 30, 1877	42½ cents.
For the years ending June 30, 1879	36½ cents.
For the year ending June 30, 1880	33.1 cents.
For the year ending June 30, 1881	32½ cents.

While devising enterprises to occupy profitably the prisoners, we have kept steadily in view the advisability of manufacturing such articles as would not in any way bring prison labor in competition with the free labor of the State. This was one of the chief reasons for establishing the jute factory, as also for converting the furniture factory, formerly worked by N. P. Cole, into a chair factory, there being $500,000 worth of chairs imported into the State yearly, very many of them made in the eastern prisons, and not a chair factory on this coast.

At the time of our last report, the contractors employing convict labor at San Quentin were preparing to close their contracts for prison labor with the State, in obedience to the provision of the Constitution. On December 31, 1881, the system of contract labor ceased, since which time we have worked the prisoners on behalf of the State.

JUTE MILL.

The jute mill, which was in process of erection at our last annual report, has since been finished and is now in complete and successful operation. In the short space of less than three months the entire

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system, involving the work of drawing, spinning, and weaving (the last consisting of one hundred looms); also, the making of bags, burlaps, and twine, is operated by convicts alone, the services of less than half a score of free men being necessary for supervision only. The entire factory building, engine house, foundry, warehouse, and wall, were built by convict labor; the only exceptions were one foreman master mason, one master carpenter, with two assistants for part of the time only.

For a fuller account of the successful operation of this great enterprise, we most respectfully refer your Excellency to the inclosed report of Warden Ames.

CHAIR FACTORY.

We feel confident that your Excellency will be greatly pleased and interested with the report which Warden Ames gives of the progress that is being made in the chair factory.

SINGLE CELL SYSTEM.

We would also call your Excellency's special attention to Warden Ames' special plea for such a remodeling of our prison as will enable us to adopt the single cell system. This is an important matter, and one that should command the attention of our next Legislature.

ESCAPES.

If your Excellency will notice, in Warden Ames' inclosed reports, that not a single convict has escaped from San Quentin during the fiscal year, and contrast this with the history of the prisons where convicts are farmed out to build roads, etc., it will go far to convince your Excellency of the wildness of many of the schemes for working convicts that were recommended to this Board. The State of Texas, where the convicts are farmed out, reports the escape of one hundred and ninety prisoners during the year.

Warden Ames refers with pride to the very few of those discharged from the prison who have been returned for the second time.

HOSPITAL FOR CRIMINAL INSANE.

We beg to call your Excellency's attention to a subject which we hope will elicit your Excellency's assistance and sympathy, viz.: the disposal of our criminal insane. There seems to be but one opinion by those who have given the subject careful and intelligent consideration, viz.: that the criminal insane should not be placed in the same wards or seated at the same table with ordinary patients; our sympathy with the unfortunate insane, as well as our reason, rebels against it.

Dr. Shurtleff, in his report to the Directors of the State Insane Asylum, for 1873, says:

There have been, within the period of my superintendency, in all, forty-six patients transferred from San Quentin to Stockton. Among them were murderers, highway robbers, burglars, thieves, and the perpetrators of other atrocious crimes. Some of them, in their physical outlines, no less than by their vicious lives, illustrate a brutalized degeneracy reached only through a long course of aucestral debasement. They are generally familiar with all the low slang, mischievous acts, and common vices usually prevalent in the haunts of criminals. Mental disease

does not deprive them of these bad attainments, nor wholly destroy their natural characteristics. It seldom changes them for the better, or renders their influence other than pernicious. The murderer, becoming insane, is more disposed to homicidal violence than is the good law-abiding citizen with the same mental affliction. So the insane thief is more likely to steal than the patient who, before his insanity, had respected the rights and property of others; and the burglar, unless stupid from dementia, or a purposeless maniac, is almost certain to contrive the means of picking locks, and of making his escape from the asylum. He is also very likely to teach others his troublesome art. In spite of the closest confinement and the best security consistent with asylum discipline, twenty-five per cent of our convict patients have escaped. The influence of this claes of patients upon others is incalculably bad in every respect. But (continues Dr. Shurtleff) by this incompatible mixture, a still greater wrong is done to the other inmates socially. By compulsion, and without fault of their own, they are made the associates of convicted felons. We must not suppose the insane are stolid and indifferent, as to their moral and social position; on the contrary, they are frequently rendered more acutely sensitive to every apparent disrespect or derogation. Indeed, I question the moral right, though the Legislature has arbitrarily established the legal one, to force upon the society of the honorable and upright, who are secluded from the public by the misfortune of sickness, the convicted felon who has been excluded from the general society of his fellow beings solely on account of his crimes. To do so is to tantalize misfortune, and add a needless shame to affliction.

Dr. Dewey, Physician to the Illinois State Insane Asylum, speaking of the unfitness of insane criminals for association with the insane who are not criminals, after enumerating the crimes of those placed under his charge, says:

Is not the moral infection of such as these in the asylum as much to be dreaded as any physical infection? If one sickly sheep can infect the flock, how much pestilence will these moral lepers bring with them? Are not the misfortunes of the insane already sufficient, without subjecting them to this further degradation? Is it possible to suppose that the people of any community or State into whose families the ominous specter of insanity sooner or later stalks, wish the afflicted ones to dwell familiarly with such companions? Insanity but seldom renders its victims better than before, in any respect; more generally, indeed, it adds darker and more repulsive features to the character. They are more prone than the rest of the insane to commit dangerous and violent acts; to be concocting plans of escape, rebellion, or mutiny; to torment the feeble and irascible among them; to teach new lessons in depravity to the pupils so easily found around them.

Dr. G. G. Tyrrell, President of the State Medical Society of California, in his address to the members of that body in May, 1882, says:

From extracts which might be multiplied from the experiences of every physician in attendance upon an insane asylum, we can partially learn how wrong, how unjust, and how unfit it is to send these criminals, made worse by reason of their insanity, to our State Insane Asylums. They cannot be separated from other insane patients, as our asylums are not constructed for that purpose, and they cannot be locked up in their rooms, as that is just what they are sent to the asylum to escape, because it is unjust and inhuman and would destroy every hope of recovery. The asylum has no machinery—and should need none—such as is required for the safe keeping of this class.

No proper place exists in our prison for the care and treatment of these insane criminals. It is not just or right to keep a noisy maniac within the wards of a prison hospital among cases of sickness where absolute quiet is required; neither ought the nineteenth century civilization permit the thrusting of a raving maniac within the walls of a dark and noisome dungeon, deprived of light and wholesome air, perhaps chained to its damp and reeking floor, to preserve from harm its other and more sane inmates. The only remedy presented to us to obviate this manifest and glaring wrong to our fellow-beings, who, although insane, are not criminal, and to those who are both criminal and insane, is a separate and special provision for the care and custody of the criminal insane, and this in the erection by the State of a suitable asylum constituted and adapted to this special purpose, since the inmates intended for its occupancy, although insane, are still dangerous outlaws and criminals, retaining, for the most part, all their criminal characteristics and vicious proclivities. More especially is this required from the want of adequate room for the proper care of the ordinarily insane, our asylums now being filled far beyond their sanitary capacity.

It is the opinion of those who are interested in the welfare of the insane, and have written upon the subject, that the preferable location for such an asylum would be within the precincts of our State Prison, and not in connection with hospitals or asylums for the ordinarily insane. At Folsom, within our prison grounds, is an admirable location for such an asylum. There is plenty of room, a genial climate, a generous soil that would afford plenty of occupation in cultivating and adorning it. Its construction might be accomplished at a minimum cost by utilizing prison labor—the material is right on the ground; and its medical management might

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safely be intrusted to the medical officer of the prison. Within its walls should be confined, for life, all those dangerous homicides who are acquitted on the plea of insanity, and also all those who offer the same defense for other equally atrocious crimes. All those who become insane after their arrest, and before their trial, should also be committed to the asylum, as well as those who become mentally deranged after trial and conviction, or who are serving out their term of punishment. This would at once relieve our State Insane Asylums of this very undesirable class of patients, and of their overcrowded condition, and release our prisons from the necessity of keeping insane convicts locked in their cells or thrust into dungeons, to the disgrace of our civilization.

As forcibly as these extracts present the humanitarian view of the case, there are other causes equally necessary for the separation of the criminal insane from the ordinarily insane patient. The history of every insane asylum, where the criminal insane have been confined, show that a large percentage of the criminal insane escape, thus letting loose upon the community the very worst criminal element of the State. Not only do the criminal insane escape, but every prison has its malingerers, who simulate insanity in order to be sent to the asylums, where they feel sure they can manage to make their escape. This class, as a rule, are the most desperate criminals in the prisons.

It is our deliberate opinion that it would be for the best interests of the patients confined in our insane asylums, as well as to the people of the State, that an hospital should be erected especially for the confinement of the criminal insane, and that it should be located in proximity to one of our prisons, or one of the insane asylums, where they could be under the superintendence of the Physician of the asylum or prison.

LIFE TERMS.

We beg to call your Excellency's attention to the legislative enactment allowing jurors, in cases of murder, to fix the term of sentence, and leaving it for the Judge to send the prisoner to prison for life. The life-timers are increasing very fast, there being over one hundred prisoners sentenced for life in the past six years.

In this connection we would make a suggestion which we believe, if carried out, would work no hardship to the State, but would be of inestimable value to the discipline of the prisoners, and of no little value to many of the prisoners. It is, that a life sentence should imply, not the natural life of the individual, but his expectation of life. Expectation of life means the number of years any individual, at any given age, may expect to live. Long and careful observations have shown that if a large number of persons, in ordinary circumstances, at a given age be taken, there is a law fixed and uniform, determining, within very narrow limits, the average number of years of life remaining to them. For example, if we take 10,000 persons at the age of twenty-nine years, the sum of their ages at death will amount to about 650,000 years, showing that, on an average, each person now twenty-nine years old will live very nearly thirty-six years longer. This is called the expectation of life; so, that if a person aged twenty-nine was sent to prison for life, he would serve a thirty-six year term, getting free at the age of sixty-five. A person at the age of twenty sent for life would be released at sixty-two years of age, his expectation having been forty-two years. The community would have little to fear from men at this age. If his release at the expiration of his expectation should depend upon his good conduct as a prisoner, it would be a great power for good in the discipline of the prisons. The most desperate prisoners are the life timers, who, when they pass through the gates into the prison, leave all hope behind. These desperate men are made more desperate by despair.

MORAL INSTRUCTOR'S REPORT.

Permit us to call your Excellency's attention to the Moral Instructor's report on the treatment and classification of the boys, all of whom are placed in his department. He disposes effectually of stories that parties from time to time set afloat about the boys being permitted to associate in the prison with the older and more hardened criminals. He makes the pertinent remark, that if parents would be as assiduous in their endeavors to prevent their boys from contamination after their return from prison as the prison authorities are, a far less number would be returned to prison a second and third time. He might have truly said, that if parents took as much care to protect their boys from evil associates as we do after they are committed to prison, there would be scarcely a boy sent to prison or to the Industrial School. He pays a fitting tribute to the memory of that good man, the late Rev. Noah Burton, who for twenty years labored with and for the unfortunate criminals. The Moral Instructor's remarks on the treatment of prisoners by the public and police, after their discharge from the prison, are severe but unfortunately too true.

FOLSOM.

Your Excellency will find appended the reports of the Warden, Clerk, and Physician, at Folsom, which will give a detailed account of the progress made towards finishing the prison and grounds, as well as an account of the industry being prosecuted by prison labor. There is also inclosed in the Warden's report a copy of the contract made between the State and Natoma Water and Mining Company, to which we beg leave to call your Excellency's special attention, inasmuch as the contract would seem to this Board to call for 30,000 days labor, while the Natoma Water and Mining Company so construe the contract as to claim 60,000 days' labor.

SANITARY CONDITION AT FOLSOM.

Your Excellency will observe by the Physician's report that there have been seven deaths at Folsom for the year, and that he has treated 2,430 cases classified and unclassified diseases out of an average number of three hundred prisoners. While at San Quentin, of an average of 1,200 prisoners, there were but twelve deaths, and 3,078 cases treated for classified and unclassified diseases. This enormous percentage of sickness but confirms the general reputation of Folsom as a very unhealthy climate. The officers and their families seem to have suffered more from malarial diseases than even the prisoners, several of them having had to leave, one or two of them subsequently dying, while those who remain there find it necessary to take large quantities of quinine.

For the three months, July, August, and September, of this year, there have been six deaths.

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COMPENSATION OF DIRECTORS.

Section 4 Article X of the Constitution provides for the compensation of Prison Directors, as follows:

> The members of the Board shall receive no compensation other than reasonable traveling and other expenses incurred while engaged in the performance of official duties, to be audited as the Legislature may direct.

To carry into effect this article of the Constitution, the Legislature of 1880 passed an Act entitled "An Act to define, regulate, and govern the State Prisons of California."

Section 17 of this Act, among other things, provides:

> That the Directors shall be paid for traveling and other expenses while engaged in the discharge of their duties, twenty cents per mile actually traveled.

This Act was passed by the Assembly April 13, 1880, by a vote of fifty-eight to five, and by the Senate by a unanimous vote, and received the Executive approval April 15, 1880.

The sums paid the Directors for mileage under the provisions of this Act were paid on warrants duly issued by the State Controller, after such sums had been audited, approved, and allowed by the State Board of Examiners, composed of the Governor, Secretary of State, and Attorney-General, no question whatever having ever been raised by any person or officer as to the validity of the statute.

On the twenty-fourth of February, 1881, the Senate, by a vote of twenty-four to three, and on March 4, 1881, the Assembly, by a unanimous vote, after a thorough discussion as to the merits and constitutionality of the same, passed an Act amending Sections 11, 17, 18, and 20 of the Act of 1880.

By this Act Section 17 was amended so as to read as follows:

> SEC. 17. The Directors shall receive no compensation other than ten cents per mile for traveling expenses, and one hundred dollars per month for other expenses incurred while engaged in the performance of official duties.

The amendatory Act was approved March 14, 1881, and took effect immediately.

After this amendment went into effect, the Directors received the compensation provided by Section 17, up to July 31, 1881—their accounts having been first audited as provided by law.

Since the date last mentioned, no money whatever has been received by them or either of them, although they have each expended hundreds of dollars out of their own private means, in the discharge of their official duties.

As above shown, the laws passed to carry into effect the section of the Constitution providing compensation for the Board of Directors, were regularly passed by an almost unanimous vote of the Legislature, without distinction of party, on its own motion, according to its own conception of justice and its own judgment of constitutional law, and were duly approved by his Excellency the Governor.

If any blame is to attach to any person, Board, or officer, on account of the laws thus provided, let it rest where it belongs—with the law-making power of the State—not with this Board.

No little adverse criticism and misrepresentation have been indulged in at the expense of the Directors, as if they ought to be held responsible for the Acts of the Legislature, composed in part of many of the ablest lawyers in the State; or because they did not discover that the laws were in contravention of the Constitution, notwithstanding the presumption of constitutionality that always obtains in favor of all laws thus regularly passed.

To undertake to hold this Board responsible for the law would, in our judgment, be an attempt to invest them with a power and an influence they do not possess, and to insult and degrade the Legislative and Executive Departments of the State Government.

The laws in question had been treated as valid by all the officers of the State Government, and, so far as this Board know, the validity of the same was never questioned until after the time of the appointment of the special commission to inquire into the affairs of the State Prisons (July, 1881), and then only as to that part of the amended section providing for the payment of the hundred dollars per month for other expenses.

On the eighteenth of September, 1881, this Board passed a resolution, requesting the Attorney-General to take such action in the premises as might be necessary to obtain a judicial determination of the question by the Supreme Court. That officer thereafter commenced a separate suit in the Superior Court of Sacramento County, against each Director, to recover the money that had been paid them under said Acts of 1880 and 1881, and the sum of $1,294 85 more than had ever been paid to or received by them, including, of course, the sums it was conceded on all hands the Directors were entitled to by virtue of the Constitution itself, and the sums theretofore audited and allowed by the State Board of Examiners.

The suit against Director Chapman, the then President of the Board, was tried and judgment rendered in his favor. From this judgment an appeal was taken to the Supreme Court, the judgment was reversed, and the case remanded for a new trial. A petition for a rehearing was afterwards filed on behalf of the respondent, but the same was summarily denied on the day of filing. We here insert the petition for rehearing, that the character of the cause thus far may be fully and thoroughly understood, to wit:

PETITION FOR REHEARING.

In the Supreme Court of the State of California. The People of the State of California, plaintiff and appellant, vs. A. H. Chapman, defendant and respondent.

To Hon. R. F. Morrison, Chief Justice:

The defendant and respondent above named, in the action above entitled, respectfully petitions for a rehearing of this case; or for a modification of the decision and a revision of the opinion filed herein on August 22d, 1882.

As there are actions pending against each one of the other Directors of the State Prison, and depending on the decision of this case, it is but just to all parties that the opinion in this case shall be clear and distinct, and pass upon the whole case, instead of being confined to the single question of the constitutionality of the Acts of the Legislature relating to the expenses of the Directors, commented upon in the opinion.

His Honor Justice McKee, in the opinion, after making a brief statement in the case, says: "As a Director, the defendant is charged to have received and appropriated for the years 1880 and 1881 the sum of more than three thousand seven hundred dollars, when, in fact, all his expenses incurred in the performance of his official duties did not exceed in either year the sum of two hundred dollars; and the action in hand was brought to recover back the money which he has unlawfully received and appropriated." This statement must have been predicated upon the allegations of the complaint, as to the amount received, and upon a mere offer of the Assistant Attorney-General, made on the trial, to prove that the sum received was in excess of the amount disbursed by the defendant, which offer was manifestly made simply to raise the point in the trial Court that more money had been paid to the defendant, under the Acts of the Legislature referred to, than the sum of his actual expenses; and to get a ruling upon the ques-

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tion whether the testimony was competent. It certainly is a novel way of establishing a fact, for counsel on the trial of a case to make merely an offer of proof, which being rejected as inadmissible, for any reason to treat the offer as a fact proved in the case. Such a statement reflects upon and does injustice to the defendant and prejudices the case. It is not to be understood that an official of reputable standing and character, who has simply conformed to the laws upon the statute book, is guilty of moral turpitude, because the statute may subsequently be adjudged unconstitutional, and the more especially when the State Board of Examiners have passed upon his accounts and treated the law under which it was paid as a valid one.

There is no dispute upon the question of how the payments were made. All sums paid defendant up to March 14, 1881, were paid upon audited accounts, approved by the State Board of Examiners, as is provided in Section 18 of the Act to define, regulate, and govern the State Prisons of California, approved April 18, 1880, and all moneys received by the defendant after that date were paid by the Warden of the State Prison out of the earnings of the prison, the accounts having been first audited as provided in Section 3 of the Act of March 14, 1881, amending Section 18 of the Act of 1880, above referred to.

The opinion of the Court, further on, holds that the Constitution regulates the compensation to which the Directors are entitled, and the Legislature has no power to change it.

While it is not obvious to us how the provision of the Constitution can be said to fix the "compensation," using, as it does, the word "reasonable," unless the opinion intends to hold that the word "reasonable" must be construed to mean "actual." Yet the opinion does not say so. In that case, the office of a Board of Audit would be very simple. An account of actual expenditures, properly verified, would be conclusive of the Directors' right to be reimbursed to that amount, while, on the other hand, construing the constitutional provision, in its ordinary sense and meaning, and giving effect to the word or term "reasonable," as vesting in a Board of Audit the authority to pass upon the question of whether the account of expenses for which reimbursement or payment is demanded is reasonable, would give to the Board of Audit a discretion to pass upon the reasonableness of the claim.

While the references in the opinion to the debates in the Convention are apt and pertinent upon the point that it was not intended to make the office of Director of the State Prisons a salaried one, or to allow any compensation other than "reasonable traveling and other expenses incurred while in the performance of official duties," still, to our apprehension, they furnish no evidence that the word "reasonable" was used in the sense of "actual;" and it would seem that, if such was the intention, there was little need of the direction to the Legislature to provide for the audit of such accounts.

Again, the opinion is silent upon the effect to be given to the acts of the State Board of Examiners in passing and approving the accounts prior to March 14, 1881, on which the Controller issues his warrants, as also upon the validity of Section 18 of the Act of April 15, 1880, and Section 3 of the Act of March 14, 1881, amending Section 3 of the first mentioned Act. And we respectfully submit that, as the decision of the Court sends the case back for a new trial, the trial Court ought to be informed upon all the material points in the case by the appellate Court, so as to obviate the necessity of another and possibly successive appeals.

We further respectfully suggest to the Court, that the case also presents the question of the authority of the trial Court to receive evidence of the "actual" or "reasonable" expenses of the defendant, incurred by him while engaged in his official duties during the period mentioned in the pleadings. It is not to be understood by the Court that his expenditures were only to the extent of the pitiful sum mentioned in the offer of proof made by the Assistant Attorney-General on the trial. That offer was merely an experiment to procure a decision upon the point of the admissibility of such evidence, unless there was a covert purpose of counsel to make a fling at the State Prison Directors, as an addendum to the proceedings lately before then pending to investigate the State Prison.

Independent of this offer by the Assistant Attorney-General, there is nothing in the case to show, or tending to show, that the amount of money received by the defendant was in excess of his actual expenses incurred while in the performance of his official duties; and the offer so made is not to be taken as the measure of his expenses. The defendant was bound to object to all proof of what was the sum of his actual expenses, under advice of his counsel that the evidence was not admissible; and because he did so object, and the Court sustained the objection, no inference can be drawn that his expenses were no more than the amount stated in the offer of the counsel for plaintiff. If the opinion prevails that the sums paid to defendant were to any considerable extent greater in amount than the sum of the defendant's actual expenses, it is a mistaken one, as will ultimately, and when made possible to be shown, be made to appear. But how are the State Prison Directors to have the benefit of the constitutional provision made for them? Are they to be required to perform their duties at their own cost, in the matter of their expenses? If this constitutional provision is self-acting (as the opinion holds), and the Legislature has not performed its duty in providing for the audit of their claims, are they remediless in the premises? Upon this point the defendant feels that he is entitled to the opinion of this Court; and he claims that if the constitutional provision fixes his compensation at the sum of his actual expenses, and the Legislature has failed to provide for auditing the claim, that the case is within the provisions of the Political Code, to the extent of all the amounts paid to him on accounts approved by the State Board of Examiners (Political Code, Sec. 660), the claim being one for which appropriation was made by the Legislature. It will be borne in mind that the legislative appropriations were regularly made for the support and expenses of the State Prison.

Respectfully submitted.

WM. IRVINE,
Attorney for Defendant and Respondent.

It has been erroneously stated by a portion of the partisan press of the State that the result of the decision of the Supreme Court is the restoration to the State of $17,500. This is simply false, for the reason that but little more than one half of that amount has ever been paid to or received by the five Directors during their administration of prison affairs of nearly three years, as is distinctly shown by their accounts and vouchers on file in the proper offices, while their necessary expenditures during the same time have equaled, if not exceeded, the amount received.

The Constitution of this State declares in distinct language that the Directors shall receive "reasonable traveling and other expenses."

It is, therefore, pertinent to inquire when and in what manner are they to be paid what the Constitution grants but the Court fails to give?

Since our last annual report the prison at San Quentin has been officially examined by Mr. William Haight, Special Agent of the Department of Justice, Washington, D. C. The official report of his examination, made to the Hon. Benjamin H. Brewster, United States Attorney-General, concludes as follows, viz:

In conclusion, I have no hesitation in stating, that as far as I am able to judge from my experience in prison matters, the San Quentin Prison will, as far as its officers, discipline, and general sanitary condition are concerned, compare favorably with the best prisons in the country.

This favorable condition I, of course, consider to be due to the efforts of the present prison authorities, as I have always found the condition of a prison to depend almost entirely upon the character of its officers.

Very respectfully, your obedient servant,

(Signed:) WILL. HAIGHT.

EMPLOYMENT OF CONVICT LABOR.

As your Excellency is well aware, it has been the desire of this Board to employ convict labor in the manufacture of such articles only as are not manufactured on this coast by free white labor. The Board had this in mind in establishing the jute and the chair factories, but both these factories only give occupation to about half of the convicts confined in San Quentin. To establish other industries, which will give employment to the remainder of the convicts in the manufacture of such articles as are now wholly imported from the eastern and foreign markets, is the design of this Board.

To carry out this design more fully, the Board at a regular meeting, held February 21, 1882, at the Folsom Prison, resolved to send one of its members East to acquire information in regard to the manufacture of various articles now wholly imported (the Board being unable to obtain the necessary information here); also to inform himself with reference to the labor system of the Eastern prisons, as well as the general management of their prisons, the method adopted for the reformation of criminals, etc.

Director A. H. Chapman was consequently selected by the Board, and has given the result of his visit in a communication to this Board, which communication we have the honor to append:

To the Honorable Board of State Prison Directors:

GENTLEMEN: In compliance with your request of February 21, 1882, on the fourth day of March, I left Chico and proceeded directly to New York City, and immediately entered into the somewhat tedious and difficult task of obtaining such information as required by your honorable Board.

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WOOL AND FUR HATS.

As the manufacturing of wool and fur hats by convict labor in our prisons had received much favorable thought and study from the limited sources of information to be gathered in our midst, it was one of the first industries to which I directed my investigations.

It soon became apparent to me that Eastern manufacturers of hats indulged in no sympathy with any project to transfer the manufacture of hats to the Pacific Coast.

The earlier conceptions of some who advocated the wool hat industry, as affording a means of utilizing our own product of wool in the enterprise, was soon dispelled, when the facts disclosed that only a very limited amount of the wool produced here could be used, except in the very coarser goods of the manufactured article. Another, and a much more important objection is, that only a very small proportion of the hats sold in our markets are manufactured from wool, owing, probably, to the difficulty in cleaning wool hats in our long and dusty seasons.

The capital required to successfully operate a wool hat factory for the employment of three hundred (300) men, including the machinery, which is expensive, and the imported and domestic wool, which necessarily must be accumulated in proper season, would be in excess of that required to operate our present jute factory.

From a personal examination made of some of the largest and best managed factories in this line, I am satisfied that it presents but few inducements worthy of consideration at the present time in our climate and location. For the manufacture of fur hats nearly every consideration is different.

The cost of machinery and fittings for the employment of two hundred (200) men, would not exceed $8,000, exclusive of motive power. The material used is fur, usually of a cheap grade, and mostly prepared especially for this use, and imported from Russia and Germany. Nearly all the manufacturers in the East order their stock from importers in New York, Boston, and Philadelphia, no large accumulations at different seasons being required. Arrangements for regular shipments from New York as required, would place a local factory on the same footing in this respect as most if not all the eastern manufacturers.

I visited the Dannemora Prison, in Clinton County, New York, and the Concord State Prison, in Massachusetts, both of which conduct this industry by convict labor on an extensive scale. Excepting the objection to the steam in cold weather in the sizing or shrinking department, which, in our climate, and especially with the latest improvements, would be entirely obviated, I could see no serious objections to its adoption so far as discipline could be affected.

All who were connected with this enterprise in the prisons of the East, prison officials or contractors, spoke of it as well adapted to convict labor, excepting the objection referred to, which only required the application of the proper facilities to obviate even in that climate. The objection of large bodies of men employed in this branch in the eastern manufactories, where the product must be limited to competition with convict labor, should have due consideration. The general sentiment of disapproval, with apparently a large majority of the people, will induce the managers of the prisons in due time to abolish it as an industry, for the reasons as stated.

With us the conditions are entirely different. With a population, on the coast and Territories adjacent, exceeding 2,000,000 to be supplied, not a hat factory exists. Even those who have been educated to the business, of whom there are a large number among us, could not get employment if desired. The freight alone, which costs the consumer on an average three dollars per dozen, is a profit that eastern manufacturers would gladly realize.

Every factor employed in the business can be produced here nearly as well as in the East. Importers of hats are the only class on the coast who would not be greatly benefited. The great body of consumers, as well as the smaller dealers, would soon realize the benefit. With proper manufacturing facilities to supply the demands of the trade on the coast, small dealers would be enabled to supply more direct, and the often limit in the market in sizes and styles could be remedied without large additional charges for expressage and haste.

Another large item, little thought of except when meeting the demand, is ladies' hats, which are as readily and easily made, and a line of goods to which is added more than ordinary profits. Many other minor considerations favorable to this enterprise in our State could be enumerated with but few tangible objections. No doubt, when first started, the same objections, and perhaps more unreasonable ones than have been urged against the jute enterprise at San Quentin, would obtain some footing; but in my judgment a factory for the manufacture of fur hats, whether planted in our midst by convict labor or otherwise, if inaugurated with that discretion and true business consideration necessary to success in the establishment of any industry, will meet a great want on this coast, and in due time succeed beyond ordinary expectation.

CHAIR FACTORY.

The manufacture of chairs in our prisons having received, prior to my leaving, favorable considerations from the apparent advantages that it possessed in the workshops and motive power, and the market for manufactured goods when produced, I directed my attention to this, to discover any serious objections, if any were apparent.

I visited the Detroit House of Correction, as well as other places of manufacturing in this line, where I found nearly five hundred men and one hundred women confined, and nearly all working at this industry. A large proportion of the prisoners confined are for short sentences, which materially reduce the efficiency of the labor employed in the work. The prison authorities conduct the entire business on the same principle that underlies our own State account system. They purchase the material and supplies, and conduct the business on the same basis as though

it was a private or corporate enterprise. The goods when manufactured are contracted for at schedule prices, and the orders from the contractors govern the quality and styles of goods made, so that the prison carries no unsalable stock.

This favorable condition in that prison would, if strictly adhered to, with us no doubt produce the cry of favoritism, if the goods were all purchased by one dealer or business firm. The result of yielding too largely to please all would be the accumulation at times of unsalable stock and consequent great damage to this or any enterprise inaugurated in the prison.

I refer to this important point because, knowing as I do the universally expressed desire on the part of the present prison authorities to accommodate every dealer alike in the goods manufactured on State or public account at the prisons.

The records of the Detroit prison revenues show that within the past three (3) years operations in the chair business on the same plan of public account as our own present system, the prison authorities have paid into the treasury of the City of Detroit, over and above the cost of maintenance, an excess of $100,000, besides having a large accumulated stock on hand and in process of finishing.

The machinery used here in the shops, as well as other modern chair factories of the East, are models of mechanism, and wonderful in their rapid and accurate operations and scope of execution. The approximate cost of the machinery, without full details, in use at this prison, would probably be $15,000.

Before leaving home I was very favorably impressed with the adoption of the chair manufacturing business in our prisons, first on a limited scale, and grow with the experience acquired and the demands seemed to warrant. With the examination made, and especially where convict labor was employed, I am more favorably impressed with the importance of its introduction and the opportunities it would possess in occupying a position to assist in closing another leak in our State resources, from immense importations of a class of manufactured goods to which every household in the land must pay tribute.

Not a factory, except in a very limited capacity, is now operating to supply the great demand in California, Oregon, and the adjacent Territories. The importations in this single line alone aggregating millions of dollars annually to supply the demand of the Pacific Coast is the product of eastern factories and eastern prisons.

The objection that we are wanting in the proper timber, is simply for the want of any thorough study and test of what can be produced from the great varieties of timber and immense forests at our command. At least it is worthy of trial, and should commend itself to the pride of every consumer in the State. Even though a portion of the timber required had to be supplied from the eastern markets, it could be manufactured in connection with our own at a great saving.

For a time the trial might necessitate some charge and experiment to test the timber, and produce practical results, as well as learn what could best be adapted to our wants and the trade. If success can be attained, and I believe, without a doubt, it can in many varieties of the manufactured goods at least. The chair industry in our prisons would, like the jute industry already established, be hailed by the people as a move in the proper direction to relieve them of some if the burdens of excessive importations as well as taxation. Mechanical skill is not wanting among the prison element, as demonstrated by the elegant furniture turned out of the contractors' shop during the past few years. Cane seat and other rattan work necessary to be performed, is done in some eastern prisons by those not strong, and even the women prisoners are brought into service in this line. For the reasons stated, as well as many other minor considerations favorable to the future welfare of the convicts to be worked, I know of no industry, from the large number that attracted my attention while absent, that I would consider better adopted in every requirement as an industry in the prisons, for the benefit of the resources of the institution, and the convicts to be worked, than the chair manufacturing industry presents as one of the important workings to inaugurate at the San Quentin prison.

WHIPS.

Another very important line could be introduced, with a limited number of men, that I saw working while examining the New Jersey State Prison at Trenton; that is, the manufacturing of whips, especially the ordinary team whips so largely used on the Pacific Coast. The machinery required is very limited and inexpensive.

At least sixty per cent of the cost of the manufactured goods is the labor. A large proportion of the stock required can be worked from refuse cuttings of leather used for shoes, harness, and belting, now made in the prison. The prison tannery, operating in a limited way, now makes all the leather for the prison—shoes, for both San Quentin and Folsom prisons, and the belting required in the jute and other manufacturing departments. The cuttings and scraps could nearly all be utilized in the manufacture of this class of goods, and find ready sale at home. It is generally light work, and well adapted to suit a certain class of prison element, that cannot endure severe manual labor.

There was exhibited to me, while in the shops, an invoice of buckskins imported from Napa, in our own State, and I drew from the foreman of the shops the interesting fact, that our own deerskins, as well as the scrap leather worked in the goods, were all sold in our California markets.

I would recommend that this branch of manufacturing receive your consideration, at least to the extent of saving and utilizing the scrap leather now wasted, and assist in manufacturing all the leather produced from the prison tanneries.

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HOSIERY.

While visiting the Penitentiary of Pennsylvania, at Philadelphia, my attention was especially attracted to the employment of a large number of convicts in their cells in the use of hand-knitting machines, producing many varieties of hosiery. The simplicity of the operation and the rapidity with which the ordinary or cheaper grades of goods can be produced by convict labor, impressed me as a valuable industry that could be introduced for the employment of the convicts in their cells in long evenings, or when temporarily disabled and not engaged in regular duties.

Some incentive to good work and efficient employment would add to the condition of the prisoner, and insure staple and salable goods as the result. The ordinary task assigned each prisoner as a day's work was four dozen pairs, which, at the low price of twelve cents per dozen, would add in the aggregate a large revenue during the year, that otherwise might be entirely lost to the State. Such employment would be forcing the attention of the prisoner toward useful and beneficial pursuits, in place of the too often enforced idleness which has a consequent tendency to put in action some scheme in violation of good discipline.

At the Illinois State Prison, at Joliet, I found the same industry in force, working under the contract system, and in regular shops, the same as any other regular department.

I should mention that in Philadelphia Prison the goods were manufactured at schedule prices, parties furnishing the material used in the manufacturing of the goods, the State furnishing nothing except the machines, which are not expensive.

BRUSHES.

The manufacture of brushes, especially to partially supply the demand of our local consumption, was another branch that has been thought of and discussed with a view of introducing it in the prison as an industry. My investigation in this line, by visiting several factories and gathering such information regarding the practical operations in successfully conducting this business, led me to think very favorably of it, not only for the many advantages it presents, but would be another important factor in saving to the consumer excessive freight charges, at least on a large percentage of the manufactured article.

Take, for instance, whitewash brushes, scrubbing brushes, counter and shoe brushes, as well as a very large additional line in the extensive assortment so generally used all over the Pacific Coast, and not a fractional per cent is manufactued at home.

We pay for the manufacture of the wood portion, largely or principally made in the State of Maine, which is distributed direct, or through agencies in the different cities, to the brush makers. The brush manufacturer simply adds to it the bristles, hair, or other requirements to fit it for the market. All the material necessary could be imported or gathered at home by a local factory, as well as by an eastern concern. The woodwork, manufactured from our own native woods, being by far the most important saving in this line, especially in the cheaper grade of goods. The manufacture of the wood work in the eastern States is a very large industry, requiring extensive machinery and vast quantities of lumber, and employing thousands of men to meet the requirements and demands of the trade.

I see no reason why this important branch should not reach, in our midst, a prominent position, if properly started, either by free or convict labor.

I will mention in this connection that the machinery used in the brush factory at the Elmira Reformatory, in New York, when the public account system of working convicts formerly prevailed, has been abandoned for the contract system, and was offered, when I visited that prison, at a greatly reduced price, it being represented to me as being in first class condition, and comprising all necessary machinery for the wood working business.

WAGON AXLES.

The manufacture of wagon axles in the prisons having received very favorable reports of success as an important department in the work at the Auburn, New York, State Prison, I examined that department while visiting that prison, with a view of learning, so far as possible, how far the advantages possessed in that establishment could be applied to our own situation. The examination left no doubt in my mind as to its successful workings there, both as a financial success to the contractors employing the labor and the adaptability of the labor for the work. Such an enterprise here, as well as there, must necessarily require extensive and expensive machinery to operate, with large or regular accumulation of stock to work, which, with us, as we are at present situated, does not present the advantages for complete success that other less expensive enterprises would justify.

In the Auburn establishment the contractors for the work are owners, or interested in an iron mine that supplies the material used, which gives them advantages that could not be obtained with us. No doubt our market and consumption of this important article will justify the manufacture on the coast, especially if the iron and steel works would manufacture the raw material at home in place of importation, and could furnish the material at a reasonable cost. Should the steel works, now contemplated to be erected at Oakland, succeed as it should, the manufacture of all axles now imported should follow as an auxiliary enterprise.

LAUNDRY WORK.

Another quite important employment attracted my attention at the Sing Sing Prison, and the New Jersey State Prison at Trenton, and I might say to a minor extent in quite a number of other prisons. That was washing and laundry work with machinery. In the two prisons I mentioned it is an established industry, conducted by contractors the same as any other branch of work in the prison.

I was more especially interested in the working of this line, as it seemed to present a way that the former employment of forty to sixty men at San Quentin in the laundry department could be dispensed with by the introduction of proper machinery that would accomplish the work with a very limited number of men, and a great saving in the wear of the goods and the material used.

In addition to its application in connection with our prisons, the feasibility of its introduction more generally throughout the State, quite forcibly impressed me as worthy of consideration. Modern machinery can accomplish in this line better work, more economical in its operation, so far as wear and tear is concerned, and with a rapidity and dexterity that would puzzle a Chinaman to imitate. Its introduction more generally in localities where the population would justify, would tend to the displacement of Chinese laundries, and could be done, if properly conducted, at prices that even Chinamen could not compete with.

I saw at the Trenton (New Jersey) prison, work done by machinery in this line, with convict labor, that would be a credit to any establishment. I see no reason why any town or village with a limited population could not assist in introducing and sustaining this indispensable industry in connection with any already established motive power, and do away with Chinese laundries that now seem necessary.

CARPET MANUFACTURE.

The limited time that was at my disposal precluded making as thorough an examination into carpet manufacturing as desired. From the partial examination given the subject, I became convinced that the manufacturing of plain ingrain and three-ply carpets, so largely imported and used, could be manufactured at home, and at a great saving, from our domestic wool.

While not thinking it as feasible to be introduced as an enterprise in our prisons as some other branches, yet I do believe, from the inquiry made from those that have had long and successful experience in the business, that no better field for the successful introduction of this branch of manufacturing could be found than in our State. Our own wool, with sixty per cent of dirt, is shipped to the eastern markets, handicapped with several commissions in addition to heavy freights, and is returned to us with added commissions and freights in the manufactured article. The condition of this one line of manufactured goods is simply the condition of many other great staple articles of importation that go to make up the enormous waste in our State resources, and simply permitting others to prosper and grow rich at our expense.

Could the people of California be brought to study and discuss the great interests involved in this subject of manufacturing at home with a fractional part of the zest and zeal that is spent in political discussion, it would do more to enrich the people, give happy homes to many thousands wanting to come among us, and give to our commonwealth a degree of prosperity and importance now lightly dreamed of by the present generation.

Capital is abundant and idle and would readily seek investment in this way could some centralizing force be brought to bear that would awaken an interest by diffusing reliable information such as would establish confidence in the success if entered into. Eastern skill and knowledge in the manufacturing of every line would gladly flock to our genial climate could they meet in a centralized and reliable form the information necessary to give them some inducements to come and abide with us. We hardly realize the importance and the great benefits in store for us if we could awaken an interest and study sufficient to develop all over the State these mechanical industries that could and would not only supply our own demands, but many beyond the ocean limits.

Without desiring to discuss, in this abbreviated report, the right, the duty, and policy of the State in the great question of developing manufacturing industries at home, I trust it will not be deemed inappropriate should I suggest, with a willingness to affirm from the examination I have made as to the subject, that should the State, through an efficient bureau, give reliable and practical information as would create an interest, both at home and abroad, the result would be far reaching and bear fruit a thousand fold in the benefits to be derived in the near future.

A department to foster manufacturing industries and promote immigration to our shores, under the care of the Chief Executive of the State, and such additional management as might appear practical, feasible, and economical in the working of it, could have no other result than immediate good to every interest of the State.

PRISON MANAGEMENT.

To presume to discuss the great question of prison management and reform to any extent, beyond giving the result of my observations, in this report, would be beyond the scope or design from the short examinations made in eastern prisons and their different systems while absent. The two years of my own experience, in assisting in reorganizing and in the management of

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the State Prisons of this State, is simply a primary lesson in solving the many intricacies connected with and incident to this subject. It has assisted me very materially, however, in analyzing some of the absurdities that are generated from fine theories that appear so nice in print, yet, when sought for with a view of their adoption, are largely destitute of practical utility. The opportunity of mingling with and discussing some of the more prominent points connected with this subject with some of those who had made prison management a life study, and the observation given it and its results from a practical and personal standpoint, went far to change many earlier conceived opinions that naturally gather standing unless dispelled by closer views. I refer to this because the distance of our State from wider fields of observation and experience with this subject tends to enhance many illusions of fancied results in prison science that closer scrutiny will tend to modify. Perfect prison management, or perfect systems of management, has yet to be discovered in the eastern States as well as with us. Neither has the subject of scientific penology, that seems to addle the brains of some would-be great reformers, been awarded that place in penal economy and reformation that fancy or an honest desire might wish. To express the conclusions that seem to have been the result of progress made, especially in New York, under the auspices of some of the acknowledged best penal managers, I desire to quote from the report of the Chaplain of the Albany Penitentiary, who for eleven years has ministered in that prison; and the conviction that is the result of his experience in connection with criminal life is that of many others who have given this subject careful and thoughtful attention.

Chaplain Reynolds says: "I think the impression is fast fading in the public mind, that prisons are to be considered reformatories. Certainly the law does not contemplate such a result, nor do the facts warrant such a belief." While all of the prisons that came under my observation seemed to be, so far as the personal or direct management was concerned, of a high order and generally admirably conducted, yet, like our own institutions of this character, not beyond some grave faults. The many difficult barriers that surround, especially State Prison management in the Eastern States, as well as with us, seems to preclude their attaining that degree of satisfaction that is accorded to many other public institutions. The character of the inmates to be governed by labor and discipline while in confinement, the different theories that govern their association and treatment while confined, the influence of association in prison, and its effect when again given liberty, attract frequent discussion.

The labor problem, with its abuses and benefits, whether for public account or the contract system, is a source of spasmodic upheaval. These main disturbing elements, coupled with the semi-political influences that are often paramount in their administration, make these institutions and their management subject to periodical criticism wherever they exist, and more especially when the political sentiment is subject to change. Great improvement has been made in their management, within the past few years, as the result of the adoption of more practical and economical methods, resulting from experience more than far-away theories. Some of them, so far as accomplishing the main purposes for which they were instituted, have realized more fully a higher degree of success, all things considered, than others, and in this connection I desire to refer to the Illinois State Prison, at Joliet, the Michigan State Prison, at Jackson, the Ohio State Prison, at Columbus, the Auburn State Prison, in New York, and the New Jersey State Prison, at Trenton. I refer to these State Prisons especially, as they seemed to combine, in the appointments requisite to good management and economy coupled with convenience to markets and buildings and sanitary facilities, as coming nearer to what should be aimed at in the future arrangements and management of our prison system, as worthy of close examination and study. All of them are subject alike to the defects incident to the contract labor system. Yet, owing to the failure in reaching financial success, when other plans are substituted, the system of contract labor is almost universally adopted in State Prison management in the East, and even in the State Reform School at Elmira, New York, it has recently entirely supplanted the public account system, which was originally one of the main features of that reformatory. None of those five prisons are entirely self-supporting, yet approximating so closely that the deficiency is comparatively a small annual item. But all of them, if not attaining all that might be desired in reforming the culprits and caring for them when again given liberty, have reached a degree of satisfaction in the different States and localities where situated, that places them in the front ranks as State Prisons well managed.

I visited and examined the Massachusetts State Prison at Concord, and several reformatories, houses of correction, and county and district jails in that State. Massachusetts has recently built at Concord a new prison designed to be a model in its way, but owing to numerous oversights in its location and construction, it had not to the time of my visit there filled the measure of its original expectation. Very strong reasons were being urged at that time to its entire abandonment, and the occupation of the old prison at Charlestown, as being for economy and sanitary reasons far preferable.

The system adopted in that State is of a humane tendency, as evidenced by the appointment of two ladies in the Board of the five managing Commissioners. A large interest is manifested in the management of the convict element throughout the State, and great efforts for the reformation of this class is apparent; yet for practical results it is questionable if the State Prison of that State have to the present attained higher rank for efficient management, discipline, and desired results, than some others further west.

Connecticut has comparatively a small prison at Wethersfield, averaging less than three hundred convicts. The prison buildings are old, and at the present time illy adapted to the requirements necessary in satisfactory management. Here was manifested, however, in the officers in charge and the entire convict element, more sympathetic relations than is usual in

prison life. The prison element being small, the opportunities and facilities are better adapted to these relations than in larger prisons. It is an interesting feature at the close of the day, to see the entire prison family and attendants join in sacred service and singing, before the iron bars close to the convicts all other than solitary musings.

The Albany Penitentiary is one of six similar institutions, besides the three State Prisons, the Elmira Reformatory, and the Criminal Insane Asylum at Auburn, that comprise the main prison system of New York. The penitentiaries are local or distinct prisons, governed by local management, but receive State prisoners for minor crimes, and also a large percentage of United States prisoners. The system of State Prison management in New York at present, is one Superintendent of Prisons appointed by the Governor. The appointment is for four years, and the Superintendent acts in the same capacity as the Board of Directors in our State. To his outline of policy, the several Wardens appointed by him must shape the administration of their departments. Strict economy, integrity, rigid discipline, and to make the prisons pay, seems to be the ruling or central idea. To make the administration of the prisons pay is the great reform that has overshadowed nearly every other in the New York system. At the Albany Penitentiary can be found as rigid and exacting discipline that works with almost a mechanical precision, to an extent that probably is not excelled in any prison in the East. The prison construction and its labor industry are in harmony with and give additional facilities in operating these rigid and exacting evolutions in the movements of the convicts in every minute particular. Eight hundred men here can fully realize prison life, with all its privations, restrictions, and labor, that would seem to make such a life odious if liberty should ever again bless them. Yet every precaution for sanitary and humane requirements beyond the exacting discipline and restrictions are granted. The limited time for which most of the convicts are committed, gives this system better conditions for success, than if many long or life-term men were compelled to submit to it. To those who indorse this system of treatment as meeting the ends of justice, and as better adapted to the treatment of a certain class of criminals, with a view to deter them from the commission of crime, in lieu of attempts for reformation, this prison is a model, and I think, must have, to a certain extent, its influence in that direction.

The Dannemora State Prison, in New York, is situated thirty-three miles on the mountains above Plattsburg. It was located there with a view of working the convicts in the manufacturing of iron products, from a mine acquired by the State. The iron works have more recently been entirely abandoned with great loss to the State, and the contract labor system adopted in every department. The prison officials at this prison are governing it with commendable results. Every department seemed to be in good order, and strict discipline and economy in its administration. The location being isolated it cannot possess the advantages in the way of markets and other facilities that other prisons generally have.

I visited the Sing Sing Prison twice, and spent nearly three days in examining its workings. Its admirable location gives this prison advantages that few, if any, equal. Situated so near New York City with rail and water communication, its labor and its product can be utilized to the best advantage.

It is a walled city of industry and discipline, with sixteen hundred inmates, with one cell-building six stories high, and packed beyond its capacity. Its ancient construction and dilapidated workshops are not of a character to produce pleasant or desirable results, other than financial success in its administration. Every department is watched with vigilance and care by the officers in charge, and as far as possible, humane treatment and exact justice is accorded to every class alike. No better discipline could be desired than appeared to be the result of the governing officers. It is rigid and exacting, yet for meeting the aims and present condition of the prison, it meets every requirement. But very few disabled prisoners, and no women, are retained here, which materially adds to the value of the labor. Eight hundred convicts are contracted to one firm in the manufacturing of stoves.

This prison possesses in the highest degree the advantages for financial success, and every effort possible is being made to crown that feature with an annual balance sheet that will cover the deficiency in the other prisons. With an annual surplus earnings reaching to nearly $50,000, over and above self-support, in this prison, it would naturally occur to a stranger why some provision for rehabilitating the cell structure has not been considered.

I visited the Eastern Penitentiary of Pennsylvania, at Philadelphia, in company with Hon. Richard Vaux, who, for many years, has been President of the Board of Managers of that institution, and to whose interest and zeal in eradicating many of the glaring evils in the treatment of criminals is largely due the present effort in that prison in substituting solitary treatment, in place of the present generally adopted mode of mixing indiscriminately all classes in one great family of crime.

To this prison and almost its entire system and management must be accorded an exception from anything I have or may say regarding other prisons. Isolation from contact while in confinement from other inmates and to treat every one separately is the governing idea. With this as a foundation, a new system entirely distinct from the prevailing custom is organized and fully in operation. The cost of maintenance is a subordinate thought, compared with what is contemplated in the effect on the convict and the criminal classes when prison life ceases. Each cell is about 10x20 feet in size, one story, lighted and ventilated in the roof with grated doors and wooden sliding doors, which entirely closes the inmates from the outer wards. Water and gas, with water-closets, complete a home for the occupant during his confinement, be it for one year or for life. Upon entering the prison the convict is hooded and conducted to his cell, where he receives his meals through a small opening in the grated door and works a

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some light employment, such as cigar making, knitting hosiery with hand machines, or caning chair seats.

The entire prison is a model in construction, having ten (10) tiers of cell structure, with broad corridors radiating from a central court, producing such a marked contrast from other prisons in its quiet and apparent lifeless occupation that cannot but leave the impression that here possibly may be maturing a new governing principle in the treatment of criminal life that may, in part, at least, be introduced for the treatment of the most depraved classes that would place them beyond contaminating the better type of the prison element. I was accorded the privilege of examining any cell or class of prisoners that I desired, which I did to some extent with a view of learning the condition and effect of this system of treatment. Absolute security and control of every prisoner confined is one of the first impressions that will strike the visitor. The entire absence of that controlling force in the way of guards and surplus assistance to force security, discipline, and labor, as contrasted with other prisons, is everywhere apparent, and must reduce the cost of treatment nearly or quite one half of the average cost in prison treatment.

The prevailing impression that this solitary life of the convict would, in many cases, produce insanity, is entirely at variance with what I saw or could learn from numbers that I visited in the cells and from other inquiry.

Some that I found had been incarcerated in other State Prisons, and the question of comparison as to which treatment they preferred it would vary with the different persons and circumstances of their confinement. The impression that was the result of only one half day spent in examining this prison would undoubtedly be subject to some modification if more thoroughly studied. Yet, as a whole, if changes in our management, looking to the segregation from association of the different elements should be attempted, I should deem it very important that a careful study, in part, at least, of the workings of this system in their treatment be made. My observation in handling crime leads me largely to the conclusion that simply incarceration and labor is only one general remedy for every disease. The physician treating every patient with one general dose would be as consistent as one general application for crime.

The Elmira Reformatory in New York is a prison for the treatment of the younger or less vicious class, with a view especially to their reformation. It is built in the most modern and improved plans, and scarcely any restriction in expense and complete accommodations to meet the aims sought. It is under the care of a Board of Directors, who appoint the Warden. The system of grades and rewards for merit, at the discretion of the Warden, is one of the principal features. Promotion from the lower classes to the higher grades, which are designated by different styles of apparel, is introduced to encourage good conduct. The parole from the prison, conditioned upon good behavior, is also at the discretion of the Warden. Every modern appliance of experience, as well as experiment, is introduced to accomplish desired results. With all these favorable conditions, and guided by one apparently endowed by nature and experience especially for such a trust, its objects and management is severely criticised, as failing, so far as working on any system other than personal knowledge, justice, and judgment of the Warden. If experience, and an earnest, honest desire can overcome, by good results, such criticism, it should be the reward of the present managers. One backward step, however, has been the result of poor success in the financial workings at this prison. The inevitable contractor for the labor has displaced the prison officers in guiding their employment.

The other prisons I have mentioned, as coming under my observation, I shall omit in detail. They have succeeded by prudent and careful management more than by any scientific methods. The Wardens of nearly all the prisons I visited are selected for their natural qualifications in this line more than for any special training. The Wardens of the three State Prisons, and the Albany Penitentiary in New York, are all taken from civil life, without any previous experience in managing criminals. Massachusetts displaced one who had acquired some prominence, and substituted in his place a Deputy Sheriff. Connecticut selected the former Clerk of the prison for Warden. New Jersey recently appointed a former Sheriff.

The western prisons are all governed by selections from civil life, and demonstrating quite clearly that penology, as an abstract science, is at a discount, except in California. I wish to refer briefly to one feature in the Connecticut system that, for effective purposes, is worthy for any prison system to adopt.

New York has to a limited extent the same idea, but the great scope of work precludes its efficiency to the same extent as in Connecticut. A Board of Commissioners, supported partly by contribution and partly by State appropriation, with a Secretary who is paid a salary and who is really the active officer of the commission, and whose duty is to receive each convict when discharged from prison, and care for him if he needs assistance, until employment, either at home or abroad, can be procured.

No money as in our State is paid to the discharged convict, except when reasonably expected it will be properly spent. Every encouragement to reformation is proffered in a quiet way.

No greater neglect is attached to our prison system, nor can any better reformatory feature be introduced for the present, than this or something that will meet the same ends.

Society nor business men little heed the condition of many who emerge from prison, who would again be men if taken by the hand and encouraged to new efforts, and with others the money furnished is only so much towards their downfall.

I see no reason why the prison system of California cannot be made to rank equal to any and superior to some in the East. The greatest need is in reconstruction of the cell building at San Quentin. Should that be the policy of the State, great care should be exercised in the adoption of plans to meet all the requirements in every particular for years to come. Even a

Commission, distinct from the Board of Directors, to study closely every modern improvement for safety, economy, and discipline, would be well worthy of consideration. The information gained, if properly disseminated, would largely tend to improvements in the management of not only State Prisons, but county and municipal prisons as well. No one questions the wisdom of this policy when new asylums are to be constructed. The more practical knowledge on this subject that can be placed within reach, the better the results and many less mistakes.

In conclusion, I desire to express my acknowledgment and appreciation of the many courtesies and favors extended to me by all, wherever I went. To impart such information as desired seemed to be a pleasure, and the generous hospitality extended will ever be remembered with grateful pleasure.

Respectfully submitted.

AUG. H. CHAPMAN.

CHICO, November 1, 1882.

Very respectfully submitted.

GEO. W. SCHELL,
W. F. McNUTT, M. D.,
AUG. H. CHAPMAN,
CHAS. CLAYTON,
J. H. NEFF,
State Board of Prison Commissioners.

NOVEMBER 1, 1882.

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REPORT OF THE WARDEN

OF THE

State Prison at San Quentin, California.

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WARDEN'S REPORT.

To the Honorable the State Board of Prison Directors:

GENTLEMEN: In presenting my report for the fiscal year ending June 30, 1882, I congratulate you and the State upon the results which I have the honor and gratification to submit to you. It has been a year marked with severe trials, unjust suspicions, and animadversions, but one of triumph also, and you can therefore afford to smile at the puny efforts made in some quarters to harass the administration of affairs at the prison.

At the commencement of the fiscal year, without giving the Directors or Warden an opportunity to carry out any of their projects, certain parties were induced by envious and designing persons who were hostile to the management of the prison, to indulge in severe and most unjust criticisms of its plans and its work.

Particularly was the jute project assailed and most violently by some of the press managers, who, though ignorant of the first principles underlying the matter, pretended to an almost superhuman knowledge of everything connected with the jute manufacture. Without waiting for the results of the enterprise it was, in advance, pronounced a failure. No effort was spared on the part of menacing enemies to make their baleful prophecies become true history.

It is gratifying that I can point to the failure of all these predictions, and also to the fact, that in spite of all that has been said and done by those inimical to the prison and its management, the people at large have sympathized with the enterprise. They will, therefore, be more than pleased to know that I can now report the jute factory completed and in most successful operation.

The quality of the production of the factory is equal to that of any establishment of the kind in the world. I have been assured by parties visiting us, some of them residents of Dundee, Scotland, which may be called the home of the jute manufacture, that in all its machinery and equipment, the prison factory will fairly compare with the best in the world.

The entire cost of the factory, its equipment, and the material purchased, will be shown by the tables in the report of Mr. J. V. Ellis, the Clerk of the prison.

By the express terms of the new Constitution, the entire contract system came to an end on the first of January, 1882. All the departments of the prison, therefore, since that time, have been operated under your direction for the best interests of the State. Notwithstanding the variety and extent of the interests involved under the old contract system, and the immediate and radical change, I am happy to report that there has not been a single day's stoppage of

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work in any of the departments under the new system. All of the departments, without an exception, have been a source of profit under the present management, and more has been realized to the State than ever before in the same time.

So successfully have all the enterprises connected with the prison been carried out under your instructions, that after closing up the business of the year I found a cash balance of $36,671 88 on hand. Besides this there were about $10,000 due for articles manufactured during the month of June.

I was thus enabled to pay into the State treasury $25,000, after reserving a sufficient amount to meet the expenses of the prison for the month of June. Such a state of affairs never before existed under any administration. From all the records that I can find it has been the fact that uniformly the expenses of the last month of the fiscal year were carried over to the next year, and in every year there has prior to the fiscal year just ended been a deficiency instead of a surplus.

In the statement I have made, the proceeds and profits of the jute factory have been in no way considered. That department of the prison has not as yet realized anything in cash, having been employed in the manufacture of burlaps, with orders on hand from all parts of the State for more grain sacks than I could possibly furnish in a month.

After the sacks were introduced I received more orders for the same than could be filled during the entire season. As to the quality of the sacks which have been sent out, I have not in a single instance received any complaint. On the contrary, the invariable verdict is, that they are superior to the standard Calcutta sack, which has heretofore been considered the best in the market.

CHAIR DEPARTMENT.

Next to the jute manufacture, and perhaps an equally important enterprise, is the chair department of the prison. This establishment will commend itself to the favorable consideration of the people, because it not only does not interfere with free labor, but in several respects it will actually aid the same. The kind of chairs that will be manufactured to any extent will be of the class that is most used. The trade is now mainly dependent upon the manufactories of the eastern prisons, from which they are sent to this coast, as well as to Mexico, South America, and Australia, the demand being far in excess of the supply. I find, too, upon investigation, that the material necessary for the manufacture of these chairs are among the productions of this State, the woods being tan-bark oak, sycamore, maple, eucalyptus, ash, and alder.

Employment can thus be given to many free laborers in cutting and preparing these woods. Such employment and furnishing of materials will also reduce the cost of the chairs, especially benefiting those whose limited means would not permit them to pay the prices now demanded for the very class of chairs they require. We are fast approaching the time when the convicts now employed in the chair department will be employed only in the manufacture of chairs and such other articles of furniture as are now almost exclusively imported from the eastern penitentiaries. As I know it to be your desire, so shall it be my endeavor, to operate this department of the prison as

will in the least manner possible conflict with the free labor of the State.

The "seating of chairs," as will be seen from the report of the Moral Instructor, furnished easy and healthy employment to the boys attached to his department before they were transferred to the jute factory. The few remaining are very expert, and exhibit an excellent showing each month and week.

In my first report I gave my opinion as to what was the best system to adopt, having in view the reformation of the convict as well as to deter the unreformed from the commission of offenses after their discharge.

I have seen no reason to change my ideas as then expressed. I have always believed productive work to be the first step towards reformation, and that convicts trained to systematic labor would be educated in the best school of discipline.

This system of constant labor I have been able to enforce—especially since the completion of the jute factory. Every convict in the prison, not disabled by sickness, is now assigned to some duty. Fully eight hundred are employed in remunerative labor—the others being engaged in work equally necessary and beneficial to the State—work that, if performed by free men, would involve an additional expense to the State of at least one hundred thousand dollars per annum. One result of this steady labor by all the prisoners is, that after the hour of nine o'clock P. M., there is no longer heard any of the noises within the walls incident under other circumstances to prison life; all appearing to enjoy the leisure, quiet, and sleep they have fairly earned by an industrious day's work.

While I consider work the first step in the reformation of the criminal, experience teaches me that many other influences are necessary for the accomplishment of the desired end.

The next and I may say one of the most important steps, is to provide a single cell for each prisoner. This I consider a most essential requirement, and absolutely necessary to effect a complete system of reformation. Volumes could be written in favor of this position, but the one paramount consideration is, that where there is constant enforced labor by day and solitary confinement by night, there is no opportunity given for the designing convict to contaminate those who desire to reform and do better for the future. Badly constructed as the present prison buildings are, could more and convenient ones be added, so as to furnish a single cell to each man, it would then be an easy matter to classify the prisoners so that each class or grade would be almost strangers to the others.

In this connection, I desire to call your attention to the report of the Moral Instructor, which is herewith submitted. I have endeavored to keep the discipline of the prison up to the highest standard, and as a result therefrom I am pleased to be able to say that every convict confined in the prison on the first day of July, 1881, except those who had died or been legally discharged during the year, was accounted for on the thirtieth day of June, 1882. In other words, *not a single prisoner escaped during the year*, a fact that not only compares favorably with the previous history of the prison, but remarkably so when compared with the history of the prisons of other States.

From statistics at my command I find that in the States of South Carolina, North Carolina, Virginia, Tennessee, and Texas, varied from sixty-two in South Carolina (the lowest), to one hundred and ninety

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in Texas, the highest in the list. One hundred and thirty escaped in Tennessee. In the two last named States, and indeed in several others, the system of "farming out" the convicts has been adopted. Several hundred, in what are called "outside camps," are engaged in farming and upon county roads, and in the building of railroads and canals.

The facilities for escape incident to such employment are readily taken advantage of by the convicts; for more than two thirds of the escapes were from those thus employed. Another evil attendant upon these outside camps should also be taken into view before adopting a like system in this State. Owing to the lack of proper hospital facilities, the percentage of sickness and mortality is far greater than it is among those employed in and about the prison. This is an item not to be ignored in the consideration of our system and others similar, now so strenuously urged in some quarters by our modern prison philanthropists and reformers.

The breaches of discipline have been very few during the year. In fact, only two were reported to your honorable Board for offenses that demanded a loss of credits. I will here add, that at the commencement of the fiscal year, I directed that a record be kept of all those discharged who were returned to the prison for the second term. I find the result to be, that out of five hundred and twenty-five so discharged, only seven were returned, and one of them was so returned for a crime committed before his first conviction.

SANITARY CONDITION OF THE PRISON.

In accordance with your instructions, I have endeavored to place the sanitary condition of the prison in the best possible order. The sewers have all been thoroughly cleansed, and some of them rebuilt. The lower wooden floor of the stone building having become very much dilapidated, is now relaid in cement. Salt water has been introduced to flush the sewers and sprinkle the yard. In further accordance with your instructions, as soon as it can be done, salt water will also be used in connection with all the water-closets in the prison.

The expense for water used in the prison will thus be materially reduced. The result has been that the health of the prison has been much improved, only twelve deaths from natural causes among the convicts having occurred during the year. In this connection, I respectfully refer to the report of the Physician of the prison herewith submitted. It will be seen that it is his decided opinion that it would hardly have been possible to have maintained so low a percentage of sickness and mortality among the twelve hundred prisoners, many of whom came here "broken down in health, by the diseases and injuries incident to a 'vicious life,' had it not been for the assiduous watchfulness of the prison officers in almost every detail; in the kind and quality of food, that has been abundant and wholesome and properly prepared; in the sewers, so effectually constructed and so thoroughly cleansed every day, as to leave no taint of septic gases nor an offensive smell in this illy constructed prison."

The Prison Physician further states that the mortuary average has been only *one per cent* during the year, and the patients in the hospital have averaged only six per month.

This, I think, you will admit is a remarkably favorable showing,

especially when taken in connection with the fact, also stated by him, that four hundred and fifty-nine of the convicts now in the prison, because of injuries and diseases incident to their former life, are physically unable to perform a full day's manual labor, and are therefore assigned to lighter duties than are the more robust.

THE CONTRACT SYSTEM FOR SUPPLIES.

I feel compelled to say a few words relative to the contract system for prison supplies. I consider it a most expensive as it is a most impracticable and unsatisfactory method. It has been abandoned by all the best penitentiaries in the country. It is certainly one that no good business man would adopt in his individual case. I refer more particularly to the *mandatory* provision of the law. I believe it should be left optional with the Board, and not mandatory, for these reasons:

First—It is impossible to state the exact quantity of any article required; or, if that could be done, the contract must provide for its delivery in one twelfth proportions. Any person bidding for twelve or six months, as the case might be, would, if he truly studied his own interest, make full calculation as to any possible loss he might sustain from a rise in price of the article to be supplied. After the experience I have had I must say that, without a single exception, when the prices have risen above those named in the contract, the contractor has endeavored to furnish a poorer article. The contract system, from this consideration, leads to much dissatisfaction, and in almost all cases to a loss to somebody.

Second—In every year there is some time when a standard article required for the prison can be purchased in quantities at a low price, and the State should be in a condition to avail itself of this advantage. Should any article required be of too high a price in the market some other could be judiciously substituted therefor. This cannot be done under the contract system, for, as a matter of justice to the contractor, every article should be taken that was contracted for.

I will call your attention to a single instance which will illustrate the position taken. I refer to the last bid for the supply of beef for the prison. The lowest bid was twelve and one half cents per pound, net weight, delivered on foot at the prison. You rejected the bid. If you had not done so it would have cost the State at least $62,000 for the year, or more than three fifths of the appropriation for the entire year's support of the prison.

Under the mandatory provision of the law you are compelled to advertise for other bids at the end of sixty days, the prison meanwhile being supplied with beef from other sources. The result has been that the prison has been supplied during the month of July, 1882, for $2,250, a saving of $3,000 per month, or at the rate of $36,000 for the year. This mode of supply could have been carried on for fully four months, or perhaps longer, but for the law compelling you to readvertise in sixty days.

In my opinion the remedy would be so to amend the law as to leave it entirely optional with the Prison Directors to make contracts or not as they might deem it best for the interest of the State.

Your attention is respectfully invited to the reports of the several departments herewith submitted. That from the Clerk of the prison exhibits in full detail the financial affairs during the year. Tables

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Two, Three, and Four are explained in the reports. Table Number One shows the assets and liabilities of the prison, and are as nearly correct as it is possible to make them, inasmuch as some of the values given can only be approximately true. Those of the old portion of the prison have not been changed from those given in the reports of the previous administrations.

The increase of valuation shown in the table has all been acquired during your administration. It will be seen that the excess of assets, as reported by the last administration, amounted to $457,248 15. It is now $802,115 61, the cost of the jute factory, equipment, and material being included in this amount. What that cost is, both for material and equipment, is shown in Table Five of the Clerk's report. That table presents in detail the total cost without regard to the fiscal year, the cost covering a period of about sixteen months.

I ask your special attention to those details, as they more than justify your policy in having determined the establishment of the enterprise. The success has exceeded your and my anticipations.

Since writing the first part of this report, in which special reference is made to the jute works, I have had further opportunities of judging of the success of the enterprise. Having kept a close account for the month of August, I find that although the mill was not being worked up to its full capacity, there was realized to the State a net profit of more than $6,000. This resulted from the production and sale of the manufactures of the month. In every case the articles sold have given full satisfaction. I see no reason why it should have been an exceptional month, and believe the result given may be safely taken as a basis for future calculation.

I present this gratifying fact as an unanswerable argument in favor of the wisdom of your policy in inaugurating this new manufacture.

In Table Number Seven of the Clerk's report you will see stated the profits of the different manufacturing departments of the prison. Since the new Constitution went into operation, so far as the prison was concerned, the contract system has been abrogated, and all work is now performed under the direct and entire control of the State authorities. By reference to the records at my command, I find that the average receipts from the labor of the convicts under the contract system were about $41,000 per annum, while under the new system they will be at least $65,000. In this last amount the profit from the jute enterprise is not included.

The reports from the Turnkey, Moral Instructor, and Physician, herewith submitted, fully explain themselves, and to them I invite your attention.

In conclusion, I desire to say that while many improvements have been made to and in the prison buildings, many others are yet almost immediately required. It must be remembered that the prison has been established here more than a quarter of a century. The buildings were badly constructed, at first, and in some portions are in actual decay.

The Legislature will soon meet, and these facts should and undoubtedly will be presented to that body by your honorable Board, so that personal observation can be made by a legislative committee, as that alone will enable the Legislature to act understandingly.

Herewith, I also present, and make as a part of this report, a detailed statement of all moneys drawn from the State treasury from

the appropriation for the State Prison for the thirty-third fiscal year, to whom paid, the statement being duly verified according to law.

Every department of the prison is doing well, and I desire to thank the officers and guards, one and all, for the assistance they have uniformly rendered me during the past year. I shall also ever feel grateful to your honorable Board for the assistance you have always extended, and for the confidence you have reposed in me.

Yours, very respectfully,

J. P. AMES,
Warden State Prison, San Quentin, Cal.

DETAILED STATEMENT

Of Moneys Received from the State Treasury, for what Purposes Received, and to whom, and for what Paid, for the Thirty-third Fiscal Year, ending June 30, 1882.

Bills for Support Prison, July, 1881.		
Pretorious, Trowbridge & Co., boilers	$3,400 00	
S. Foster & Co., groceries	1,304 22	
Marin County Water Company, water	1,000 00	
Buckeye Mill Company, flour	1,540 00	
Bigley Bros., groceries	769 06	
H. T. Holmes, Lime Company, lime	267 00	
J. G. Johnson, hay, etc.	556 30	
H. Levi & Co., groceries	208 92	
Merry, Faull & Co., beeves	1,644 16	
Magee & Moore, leather	414 75	
Levi Straus & Co., drygoods	514 75	
Wooster, Hubbell & Co., butter, etc	318 26	
R. T. Warden, sheep	651 49	
August 22, 1881—Warrant No. 493, issued for		$12,588 91
Bills for Support Prison, August, 1881.		
S. Foster & Co., groceries	$1,174 94	
J. G. Johnson, hay, etc.	446 08	
Pioneer Woolen Factory, flannels	1,166 45	
Jno. F. English, vegetables	567 94	
Buckeye Mill Company, flour	990 00	
Bigley Bros., groceries	774 91	
San Rafael Gas Company, gas	149 10	
H. Levi & Co., groceries	227 80	
J. MacDonough, coal	259 27	
Magee & Moore, leather	348 21	
H. Rosekrans & Co., cutlery	230 96	
Levi Straus & Co., drygoods	678 04	
Marin County Water Company, water	1,000 00	
R. T. Warden, beeves	2,103 39	
October 10, 1881—Warrant No. 1,250, issued for		10,117 10
Bills for Support Prison, September, 1881.		
Marin County Water Company, water	$1,000 00	
Buckeye Mill Company, flour	990 00	
Bigley Bros., groceries	769 05	
S. Foster & Co., groceries	1,110 95	
J. G. Johnson, hay, etc.	1,034 35	
Pioneer Woolen Mills, flannels, etc.	1,078 72	
Levi Straus & Co., drygoods	561 21	
R. T. Warden, beeves	1,538 81	
October 19, 1881—Warrant No. 1,420, issued for		8,083 09
Amount carried forward		$30,789 10

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DETAILED STATEMENT—Continued.

Amount brought forward		$30,789 10
Bills for Support Prison, October, 1881.		
Marin County Water Company, water	$1,000 00	
Bigley Bros., groceries	897 97	
Buckeye Mill Company, flour	990 00	
Miller & Lux, beeves	1,972 56	
S. Foster & Co., groceries	1,100 77	
H. T. Holmes, Lime Company, cement	110 00	
November 15, 1881—Warrant No. 1,749, issued for		6,071 30
Bills for Support Prison, November, 1881.		
Marin County Water Company, water	$1,000 00	
Zimmerman, Strouse & Co., beeves	1,787 26	
Bigley Bros., groceries	821 57	
Buckeye Mill Company, flour	990 00	
S. Foster & Co., groceries	1,178 71	
J. F. English, vegetables	687 55	
December 17, 1881—Warrant No. 2,145, issued for		6,465 09
Bills for Support Prison, December, 1881.		
Marin County Water Company, water	$1,000 00	
Buckeye Mill Company, flour	990 00	
Miller & Lux, beeves	1,753 26	
Bigley Bros., groceries	875 78	
S. Foster & Co., groceries	1,481 36	
J. F. English, vegetables	680 54	
January 24, 1882—Warrant No. 2,637, issued for		6,780 94
Bills for Support Prison, January, 1882.		
Marin County Water Company, water	$1,000 00	
Buckeye Mill Company, flour	962 00	
Bigley Bros., groceries	978 40	
J. F. English, vegetables	713 46	
S. Foster & Co., groceries	1,434 76	
J. G. Johnson, hay, etc.	771 00	
Zimmerman, Strouse & Co., beeves	1,860 33	
February 21, 1882—Warrant No. 2,988, issued for		7,719 95
Bills for Support Prison, February, 1882.		
Marin County Water Company, water	$1,000 00	
Whittier, Fuller & Co., oils, etc.	431 80	
R. T. Warden, sheep, etc.	459 04	
George H. Tay & Co., tinware	116 62	
Hubbell, Shattuck & Co., provisions	159 60	
Levi Straus & Co., drygoods	715 25	
Magee & Moore, leather	400 19	
Miller & Lux, beeves	1,620 96	
J. G. Johnson, hay, etc.	999 23	
S. Foster & Co., groceries	1,275 30	
J. F. English, vegetables	662 80	
Buckeye Mill Company, flour	1,100 00	
Bigley Bros., groceries	985 15	
March 17, 1882—Warrant No. 3,363, issued for		9,925 94
Amount carried forward		$67,752 32

DETAILED STATEMENT—Continued.

Amount brought forward		$67,752 32
Bills for Support Prison, March, 1882.		
Marin County Water Company, water	$1,000 00	
Buckeye Mill Company, flour	1,100 00	
Bigley Brothers, groceries	670 50	
J. F. English, vegetables	789 07	
S. Foster & Co., groceries	1,530 59	
J. G. Johnson, hay, etc.	532 96	
H. Levi & Co., groceries	185 49	
Magee & Moore, leather	341 10	
Miller & Lux, sheep, etc.	654 48	
Pioneer Woolen Mills, flannels	640 90	
Levi Straus & Co., drygoods	897 92	
Whittier, Fuller & Co., oils, etc.	519 90	
Zimmerman, Strouse & Co., beeves	1,880 57	
April 18, 1882—Warrant No. 3,740, issued for		10,643 48
Bills for Support Prison, April, 1882.		
Bigley Brothers, groceries	$885 25	
Buckeye Mill Company, flour	1,100 00	
Dolliver & Brother, shoe findings	82 43	
A. C. Dietz & Co., oils, etc.	89 00	
Dutton & Partridge, stationery	73 05	
J. F. English, vegetables	822 90	
S. Foster & Co., groceries	1,590 67	
Hubbell, Shattuck & Co., fish	63 99	
H. T. Holmes Lime Company, cement	88 75	
Jones & Co., wool	87 00	
J. G. Johnson, hay, etc.	955 08	
H. Levi & Co., groceries	289 89	
Miller & Lux, beeves, etc.	2,269 92	
Marin County Water Company, water	1,000 00	
Magee & Moore, leather	160 00	
Michelssen, Brown & Co., bacon	110 86	
Pardini & Co., fish	91 50	
Pioneer Woolen Mills, flannels	1,001 01	
San Rafael Gas Company, gas	152 61	
Levi Straus & Co., drygoods	570 12	
G. H. Tay & Co., tinware	202 38	
Whittier, Fuller & Co., oils, etc.	610 89	
J. Ziegenbein & Co., butter	373 74	
May 15, 1882—Warrant No. 4,122, issued for		12,671 04
Bills for Support Prison, May, 1882.		
Buckeye Mill Company, flour	$1,100 00	
Bigley Bros., groceries	851 49	
California Sugar Refinery, sirup	187 50	
J. F. English, vegetables	773 91	
S. Foster & Co., groceries	1,617 25	
G. W. Gibbs & Co., iron	163 63	
W. T. Garratt, pipe, etc.	183 62	
Hubbell, Shattuck & Co., fish, etc.	230 69	
H. T. Holmes Lime Company, lime	107 25	
J. G. Johnson, hay, etc.	741 70	
Merry, Faull & Co., lard, etc.	98 12	
Miller & Lux, sheep	574 80	
Pioneer Woolen Mills, flannels	958 76	
H. Rosekrans & Co., hardware	336 60	
Levi Straus & Co., drygoods	766 78	
H. B. Slaven, drugs, etc.	117 66	
Mark Strouse & Co., beeves	1,937 09	
Amounts carried forward	$10,746 85	$91,066 84

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DETAILED STATEMENT—Continued.

Amounts brought forward	$10,746 85	$91,066 84
Whittier, Fuller & Co., oils, etc.	291 13	
George H. Tay & Co., tinware	103 76	
Marin County Water Company, water	1,000 00	
J. Ziegenbein & Co., butter	284 09	
Louis Sloss & Co., hides, etc.	1,009 57	
June 24, 1882—Warrant No. 4,551 issued for		13,435 40
Total paid for 33d fiscal year		$104,502 24
Paid for salary as per State Controller's warrants:		
July, No. 494	$5,208 10	
August, No. 1,251	4,956 61	
September, No. 1,419	4,986 85	
October, No. 1,750	4,953 93	
November, No. 2,146	4,931 15	
December, No. 2,636	5,027 70	
January, No. 2,987	5,021 85	
February, No. 3,362	5,076 30	
March, No. 3,739	5,061 70	
April, No. 4,121	5,068 35	
May, No. 4,550	5,036 60	
		55,329 14
Total amount received and disbursed for the 33d fiscal year		$159,831 38

STATE OF CALIFORNIA, }
County of Marin, } ss.

Personally appeared before the undersigned, a Notary Public in and for the County of Marin, J. P. Ames, Warden of the California State Prison at Point San Quentin, who, being sworn, deposes and says that the foregoing tables contain a true and correct account of all money received during the thirty-third fiscal year from the State treasury (by virtue of an Act making appropriations for the support of the Government of the State of California for the thirty-third and thirty-fourth fiscal years, approved May 12, 1880), together with a detailed account for what purposes received, and to whom and for what paid.

J. P. AMES, Warden.

Sworn and subscribed to before me, this the ninth day of October, 1882.

JOHN C. EDGAR,
[SEAL.] Notary Public, Marin County, California.

REPORT OF THE CLERK

OF THE

State Prison at San Quentin, California.

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CLERK'S REPORT.

Honorable J. P. Ames, Warden:

DEAR SIR: I herewith submit to you my report, in tabulated form, for the fiscal year ending June 30, 1882, embracing seven statements, referred to as follows:

Table No. 1 gives the proper value of assets with liabilities. Against liabilities we have, in the list of assets, cash on hand, merchandise in commissary storerooms, stock in jute factory and other manufacturing departments, together with bills receivable, amounting in all to $166,219 27 in their actual value.

Table No. 2 shows a decrease in drafts upon the State treasury for the past fiscal year of $11,171 66. To show this decrease, I have rendered this statement comparative with the drafts for the general support of the prison during the previous fiscal year. The difference in the total amounts drawn from the State treasury for the general support of the prison and the maintaining cost of prisoners was expended in prison improvement account referring to ordinary repairs within and without the walls, and transportation of discharged prisoners, with allowances to the same, in accordance with the statute. It should be understood that heretofore there was a special appropriation for transportation of discharged prisoners, but none was asked or received for the purpose during the fiscal year just ended.

Table No. 3 exhibits the cash cost of supporting the prisoners, being a complete abstract as to each account included in maintenance.

In Table No. 4 the maintenance of prisoners includes for the account "subsistence," all issues of provisions for the prisoners, and the cost for board for the officers and guards.

Table No. 5 states the entire cost of the jute factory, with its equipment and jute material—prison labor employed in the construction excepted. The account for such labor, however, is included in the placed value of the jute factory, from which is eliminated the market value of jute material, as is shown in the table of assets.

Table No. 6 is an exhibit of the cost of and revenue from brick and hogs and poultry, both accounts showing a material profit to the State.

Table No. 7 refers to the balance sheet for the different departments, other than the jute factory, giving in consolidated form the profits from the same to the State from January 1, 1882. Bills receivable, in the same table, represent amounts due and owing the various departments. Bills payable, as stated in Table No. 1, covers all amounts due for purchases and salaries, while bills payable, in Table No. 7, only refers to salaries of the employés of the various depart-

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ments for the month of June, together with the amounts due for purchases made for the departments.

Hoping that the statements, in the order given, may be satisfactory, as they are complete,

I am yours respectfully,

J. V. ELLIS, State Clerk.

TABLE No. 1.

STATE PRISON AT SAN QUENTIN, CAL.

Assets and Liabilities at the close of the Fiscal Year ending June 30, 1882.

ASSETS.		
Real estate	$38,000 00	
Value of prisons and shop buildings	400,650 00	
Value of jute factory, together with engine and boiler rooms, foundry, and warehouse	230,000 00	
Engines and machinery (departments)	35,250 00	
Pipes and fittings	19,472 85	
Beds and bedding	12,155 22	
Furniture and crockery	13,800 00	
Reservoirs	31,278 55	
Ordnance	4,000 00	
Hardware and tools	4,275 00	
Wagons and harness	3,576 50	
Drugs and medicines, and fixtures	635 60	
Hogs and poultry	1,840 00	
Brick on hand in kiln	2,500 00	
Accounts due from sundry debtors for merchandise	3,162 91	
Merchandise on hand in commissary	5,963 20	
Cash on hand	36,671 85	
Stock on hand in various departments	48,589 44	
Bills receivable	25,124 50	
Value of jute material on hand	46,000 00	
Live stock	4,285 00	
One whitehall boat	250 00	
Total		$967,480 62
LIABILITIES.		
Merchandise and other purchases, month of June	$12,858 79	
Bills payable as follows:		
Chair department	38,351 91	
Door department	1,303 26	
Tannery department	3,497 48	
Foundry department	2,329 08	
Harness department	313 76	
Tub and pail department	394 88	
Jute factory	2,461 14	
Officers and guards	3,854 71	
		65,365 01
Excess of assets over liabilities		$802,115 61

TABLE No. 2.

STATE PRISON, SAN QUENTIN.

Comparative Statement of Cash Receipts from State Treasury and Cost for Maintaining Prisoners for the Two Fiscal Years ending June 30, 1882.

MONTHS.	Received from State Treasury for Fiscal Year ending June 30, 1881.	Received from State Treasury for Fiscal Year ending June 30, 1882.	Maintenance of Prisoners for Fiscal Year ending June 30, 1881.	Maintenance of Prisoners for Fiscal Year ending June 30, 1882.	Average Number of Prisoners for the Fiscal Year ending June 30, 1882.
July			$14,675 75	$12,047 69	1,211
August		$17,797 01	13,754 06	12,977 34	1,202
September	$35,250 40		13,043 36	12,389 04	1,192
October	19,864 10	28,143 64	12,515 34	12,367 46	1,191
November	11,526 47	11,025 23	12,927 25	12,906 02	1,210
December	18,436 94	11,396 24	13,098 47	13,316 73	1,209
January	13,276 41	11,808 64	12,876 50	11,755 82	1,206
February	15,064 54	12,741 80	12,272 73	11,855 79	1,222
March	15,000 00	15,002 24	13,176 25	11,797 93	1,189
April	35,300 00	15,705 23	12,649 68	12,082 15	1,180
May	431 30	17,739 39	12,435 20	12,102 70	1,190
June	6,852 92	18,472 00	12,340 09	11,378 78	1,203
Totals	$171,003 08	$159,831 42	$155,764 68	$146,977 45	1,200

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TABLE No. 3.

STATE PRISON, SAN QUENTIN, CALIFORNIA.

Exhibit of the Cash Cost of Maintaining Prisoners at the California State Prison, San Quentin, during the Fiscal Year ending June 30, 1882.

MONTHS.	Subsistence.	Salary.	Water.	Clothing.	Shoes.	Beds and Bedding.	Fuel.
July, 1881	$4,602 14	$4,013 22	$1,000 00	$568 44	$345 68	$58 37	$398 25
August, 1881	5,242 25	3,958 02	1,000 00	567 56	295 41	77 42	548 70
September, 1881	5,025 05	3,776 70	1,000 00	614 78	186 73	102 74	170 40
October, 1881	5,046 46	3,902 55	1,000 00	745 01	186 11	94 72	352 54
November, 1881	5,099 23	3,755 01	1,000 00	895 00	217 88	246 53	264 62
December, 1881	5,233 07	3,767 37	1,000 00	772 32	333 06	261 88	394 52
January, 1882	4,860 57	3,704 28	1,000 00	530 92	273 91	204 43	370 14
February, 1882	4,567 07	3,723 10	1,000 00	605 51	320 31	306 19	382 94
March, 1882	4,664 99	3,801 47	1,000 00	623 15	277 32		352 12
April, 1882	4,643 13	3,851 47	1,000 00	715 75	286 64	170 68	313 03
May, 1882	4,856 12	3,909 78	1,000 00	643 74	260 63	205 04	214 96
June, 1882	4,847 30	3,855 23	1,000 00	588 12	150 36	150 18	143 88
Totals	$58,687 38	$46,018 20	$12,000 00	$7,870 30	$3,134 04	$1,878 18	$3,906 10

TABLE No. 3—Continued.

MONTHS.	Forage.	General Expense.	Drugs and Medicines.	Stationery and Postage.	Gas.	Total Cost per Month.	Average Number of Prisoners.	Average Cost per Capita per Day.
July, 1881	$281 38	$540 67	$52 10	$68 94	$118 50	$12,047 69	1,211	$0 32.1
August, 1881	261 27	598 81	267 31	36 99	123 60	12,977 34	1,202	34.8
September, 1881	551 64	531 00	208 04	72 86	149 10	12,389 04	1,192	34.6
October, 1881	216 06	546 93	84 04	32 59	160 45	12,367 46	1,191	33.5
November, 1881	485 02	579 29	67 14	77 86	218 44	12,906 02	1,210	35.5
December, 1881	559 94	588 53	106 70	62 08	237 26	13,316 73	1,209	34.4
January, 1882	114 44	302 11	116 54	60 04	218 44	11,755 82	1,206	31.5
February, 1882	230 98	326 60	108 24	96 28	188 57	11,855 79	1,222	34.6
March, 1882	301 05	393 46	138 00	56 06	190 31	11,797 93	1,189	32.0
April, 1882	382 42	445 41	46 34	74 67	152 61	12,082 15	1,180	34.1
May, 1882	170 15	542 85	129 34	49 49	120 60	12,102 70	1,190	32.8
June, 1882	297 39	87 34	79 46	70 92	108 60	11,378 78	1,203	31.5
Totals	$3,851 74	$5,483 00	$1,403 25	$758 78	$1,986 48	$146,977 45	1,200	$0 33.5

TABLE No. 4.

STATE PRISON AT SAN QUENTIN, CAL.

Cost per Capita of Maintaining Prisoners for the Fiscal Year ending June 30, 1882.

Salary of Officers and Guards		$28 35
Water		10 00
Clothing, shoes, beds and bedding		10 73
Subsistence		48 90
Fuel, forage, general expense, gas, medicine, stationery, postage, etc		14 50
Total cost of maintenance of each prisoner for the fiscal year		$122 48
Subsistence per day for each prisoner		13½

TABLE No. 5.

STATE PRISON AT SAN QUENTIN, CAL.

Statement of Entire Cost of Jute Factory and its Equipment, and Jute material, June 30, 1882.

Machines and Shafting.		
Machines, contract with Messrs. Fairbairn, Kennedy & Naylor, England	$64,051 97	
Freight and duty charges from Leeds, England, to San Francisco	29,822 35	
Freight charges from San Francisco to San Quentin	994 24	
Shafting for machines, including pulleys for all machines in main factory	5,134 11	
Labor, placing shafting in position in main building, and setting up machines	3,890 28	
Hydraulic press and fixtures	1,323 50	
Total		$105,216 45
Engines, Boilers, Shafting, etc.		
Engines and boilers, contract with Prescott, Scott & Co.	$22,100 00	
Main driving belt, Gutta Percha and Rubber Manufacturing Company	540 67	
Main counter-shaft and pulleys, per agreement	4,100 00	
Large pulleys and shafting for belt chamber	2,141 60	
Sundries, pulleys, pipe, pillow blocks, grating, etc	1,249 83	
Labor, placing shafting in belt chamber	648 23	
Rope belting, belt chamber	425 38	
Fire-bricks, 2,600, boiler room	117 00	
Leather belting, for driving shafting in main building	1,807 24	
Yucca boiler covering for new boilers	261 60	
Total		33,391 55
Construction of Buildings, including Jute Factory, Boiler and Engine Room, Walls, and Warehouses.		
Lumber	$5,206 77	
Tin roof	1,899 80	
Skylights	925 20	
Iron trussing	486 20	
Lime, 3,011 barrels	4,365 95	
Cement, Rosedale, 1,680 barrels	3,696 00	
Cement, Portland, 970 barrels	3,783 00	
Salaries, brick masons, carpenters, etc	3,639 56	
Amounts carried forward	$24,002 48	$138,608 00

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TABLE No. 5—Continued.

Amounts brought forward	$24,002 48	$138,608 00
Water mains, from connection main reservoir	963 45	
Plumbing, $558 69; iron pipe, $402 39	961 08	
Interest, warrants remaining in bank for collection	2,059 00	
Discount, collection charges on warrants	164 00	
Nails, bolts, locks, screws, etc.	1,798 25	
Sand and gravel, including all used in construction and in concrete floor, including oil for cleaning	1,430 00	
Oil for cleaning machinery, etc., and paints—machinery in entire building	586 60	
Bar iron	635 50	
Brick, 2,130,830	13,317 70	
Total		45,918 06
Total cost of building and equipment		$184,526 06
Cost of Jute Purchased in India.		
Jute, raw material, from Calcutta, through Degener & Co.	$17,878 77	
Jute, raw material, from Calcutta, through Balfour, Guthrie & Co.	24,464 28	
Jute, raw material, from Calcutta, through Balfour, Guthrie, & Co.	539 46	
Insurance, cartage, storage, etc., in San Francisco, and freight charges, San Francisco to San Quentin	12,973 19	
Interest, warrants remaining in bank for collection	501 00	
Discount, collection charges on warrants	55 00	
Total		$46,411 70
Grand total		$230,937 76

TABLE No. 6.

STATE PRISON AT SAN QUENTIN, CAL.

Statement of Brick, and Hog and Poultry Accounts, June 30, 1882.

Brick Account.		
Sales of brick and brick used in prison improvements during fiscal year ending June 30, 1881	$23,167 25	
Same for fiscal year ending June 30, 1882	35,807 55	
Total		$58,974 80
Value of brick on hand July 1, 1880	$2,085 00	
Expenses brick account for fiscal year ending June 30, 1881	12,842 65	
Expenses brick account for fiscal year ending June 30, 1882	15,277 55	
Total		30,205 20
Net receipts (including brick to prison improvements)		$28,769 60
Deduct original cost of brick land		15,616 00
		$13,153 60
Add present value of brick land	$13,000 00	
Add value of brick on hand June 30, 1882	2,500 00	
		15,500 00
Net profit to State for two fiscal years ending June 30, 1882		$28,653 60

TABLE No. 6—Continued.

Hog and Poultry Account.		
Cash sales during fiscal year ending June 30, 1882	$1,192 18	
Issued by Commissary during fiscal year ending June 30, 1882	1,348 96	
Value of hogs on hand July 1, 1882	1,840 00	
Total		$4,345 14
Deduct value of hogs on hand July 1, 1881	$1,840 00	
Deduct expense hog ranch for fiscal year ending June 30, 1882	1,006 89	
Total		2,846 89
Net profit to State for fiscal year ending June 30, 1882		$1,498 25

TABLE No. 7.

BALANCE SHEET,

Showing the Receipts to each Department against the Expenditures of same, with profit to the State, to June 30, 1882, from January 1, 1882.

Chair Department.		
Stock on hand, June 30, 1882	$34,884 85	
Bills receivable	10,632 44	
Sales of articles manufactured, to July 1, 1882	18,822 01	
		$64,339 30
Paid to salary and material accounts to July 1, 1882	$18,444 89	
Bills payable—salary for June, and amounts due for material to July 1, 1882	38,351 91	
		56,796 80
Net profit		$7,542 50
Door Department.		
Sales of articles manufactured, to July 1, 1882	$14,730 02	
Bills receivable	2,461 32	
		$17,191 34
Paid to salary and to material accounts to July 1, 1882	$7,248 03	
Bills payable—salary for June, and amounts due for material to July 1, 1882	1,303 26	
		8,551 29
Net profit		$8,640 05
Foundry Department.		
Sales of articles manufactured, to July 1, 1882	$8,817 31	
Bills receivable	3,507 79	
		$12,325 10
Paid to salary and material accounts to July 1, 1882	$6,350 50	
Bills payable—salary for June, and amounts due for material to July 1, 1882	2,329 08	
		8,679 58
Net profit		$3,645 52
Harness Department.		
Sales of articles manufactured, to July 1, 1882	$5,634 51	
Bills receivable	1,381 02	
		$7,015 53
Paid to salary and material accounts to July 1, 1882	$1,829 90	
Bills payable—salary for June, and amounts due for material to July 1, 1882	313 76	
		2,143 66
Net profit		$4,871 87

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TABLE No. 7—Continued.

Tannery Department.		
Stock on hand June 30, 1882	$9,584 64	
Bills receivable	1,693 15	
Sales of articles manufactured, to July 1, 1882	5,985 53	
		$17,263 32
Bills payable—salary for June, and amounts due for material to July 1, 1882	$3,497 48	
Paid to salary and material accounts to July 1, 1882	8,993 54	
		12,491 02
Net profit		$4,772 30
Tub and Pail Department.		
Sales of articles manufactured, to July 1, 1882	$4,154 41	
Bills receivable	680 69	
		$4,835 30
Paid to salary and material accounts to July 1, 1882	$1,972 29	
Bills payable—salary for June, and amounts due for material to July 1, 1882	394 88	
		2,367 17
Net profit		$2,468 13
Belting Department.		
Manufactures to departments	$3,180 60	
Cost of material	1,830 45	
Net profit		$1,350 15
Harness Account (special).		
Sales of articles manufactured	$1,448 65	
Value of stock on hand June 30, 1882	2,483 80	
		$3,932 45
Cost of material		2,294 55
Net profit		$1,637 92
RECAPITULATION OF PROFITS.		
Chair Department	$7,542 50	
Door Department	8,640 05	
Foundry Department	3,645 52	
Harness Department	4,871 87	
Tannery Department	4,772 30	
Tub and Pail Department	2,468 13	
Belting Department	1,350 15	
Harness Account	1,637 90	
Total net profits		$34,928 42

REPORT OF THE TURNKEY

OF THE

State Prison at San Quentin, California.

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TURNKEY'S REPORT.

SAN QUENTIN, June 30, 1882.

Honorable J. P. Ames, Warden San Quentin State Prison, Marin County, California:

DEAR SIR: I have the honor to submit to you, herewith, my report, in tabular statements, for the fiscal year ending June 30, 1882.

Very respectfully yours,

A. G. HINMAN, Turnkey.

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TABLE NO. 1.

Recapitulation of Received and Discharged Prisoners, from July 1, 1881, to July 1, 1882.

Months.	By Commitment	United States Prisoners Received	Returned Convict Witnesses	Escapes Recaptured	Returned with Additional Sentence on a New Charge	Returned from Insane Asylum	Total Receipts	Number of Prisoners on Hand at the Close of Each Month.
1881.								1881.
July	31		1	1			33	July, 1,201
August	29	1					30	August, 1,198
September	31	2					33	September, 1,189
October	42						42	October, 1,193
November	51	1					52	November, 1,214
December	44	2	1				47	December, 1,208
1882.								1882.
January	37	1	2				40	January, 1,212
February	51				1		52	February, 1,219
March	58	2					60	March, 1,184
April	36		2				38	April, 1,179
May	35	1	2			1	39	May, 1,187
June	43	1					44	June, 1,205
Totals	488	11	8	1	1	1	510	Monthly average, 1,199 1/12

TABLE NO. 1—Continued.

Months.	Discharged per Act, and Restored	Discharged by Act	Discharged by Order of Court	Taken out by Order of Court as Witnesses	Removed to Folsom State Prison by order of the Board of State Prison Directors	Pardoned by the Governor	Pardoned by the President	Escaped	Died	Suicide	Taken to Insane Asylum	Taken out on a New Charge	Taken out for Trial on an Additional Charge	Taken out by Order of Court for a New Trial	Taken out on a Writ of Probable Cause	Total Discharges
1881.																
July	24	21		1		2		1	2		1					52
August	18	14												1		33
September	21	17							1		2			1		42
October	15	14				3			1					5		38
November	13	11		1		2			3					1		31
December	33	18				1			1							53
1882.																
January	14	13	2	2		2	1				1		1			36
February	28	12				3			2							45
March	18	13			60	2				1	1					95
April	15	21		2		2	1		1			1				43
May	16	9		2		3			1							31
June	16	8								1					1	26
Totals	231	117	2	8	60	20	2	1	12	2	5	1	1	8	1	525

Number of Prisoners on hand June 30, 1881	1,220
Received from July 1, 1881, to July 1, 1882	510
	1,730
Discharged from July 1, 1881, to July 1, 1882	525
On hand June 30, 1882	1,205
Decrease for the year	15

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TABLE No. 2.

Nativity of Prisoners.

Nativity.	Number.	Per Cent.	Nativity.	Number.	Per Cent.
United States and Territories.			*Foreign.*		
Alabama	4	.34	Austria	5	.42
Arkansas	4	.34	Australia	5	.42
Alaska Territory	1	.08	China	246	20.41
California	218	18.09	Canada	21	1.74
Colorado	1	.08	Chili	3	.25
Connecticut	3	.25	Denmark	5	.42
Florida	4	.34	England	40	3.32
Georgia	5	.42	France	16	1.33
Illinois	23	1.90	Finland	1	.08
Indiana	16	1.33	Germany	53	4.39
Iowa	7	.58	Holland	1	.08
Kansas	2	.16	Ireland	85	7.05
Kentucky	11	.91	Italy	5	.42
Louisiana	5	.42	Mexico	45	3.73
Maine	13	1.07	Nova Scotia	5	.42
Maryland	10	.83	New Brunswick	4	.34
Michigan	5	.42	Peru	1	.08
Massachusetts	39	3.23	Portugal	3	.25
Missouri	24	1.99	Poland	1	.08
Mississippi	2	.16	Russia	2	.16
New Hampshire	4	.34	South America	1	.08
New York	117	9.71	Sweden and Norway	4	.34
New Jersey	7	.58	Switzerland	4	.34
North Carolina	4	.34	Scotland	8	.66
Nebraska	1	.08	Sandwich Islands	1	.08
Nevada	1	.08	Wales	2	.16
Ohio	19	1.57	West Indies	4	.34
Oregon	3	.25	At sea	3	.25
Pennsylvania	37	3.07			
Rhode Island	5	.42	Totals	574	47.64
South Carolina	3	.25			
Tennessee	10	.83	RECAPITULATION.		
Texas	1	.08			
Vermont	3	.25	United States	631	52.36
Virginia	10	.83	Foreign	574	47.64
West Virginia	1	.08			
Wisconsin	5	.42	Totals	1,205	100.00
District of Columbia	1	.08			
New Mexico	1	.08			
Washington Territory	1	.08			
Totals	631	52.36			

TABLE No. 3.

Classification of Crime.

Crime.	Number.	Crime.	Number.
Arson	3	Forgery	20
Arson, first degree	1	Felony	43
Arson, second degree	10	Grand larceny	220
Arson and burglary	1	Grand larceny and prior conviction	12
Attempt to commit arson	2	Incest	3
Assault to murder	48	Larceny, first degree	2
Assault to rape	7	Murder	6
Assault to rob	16	Murder, first degree	86
Assault to do great bodily injury	1	Murder, second degree	105
Assault with deadly weapon	18	Manslaughter	50
Attempt at burglary	16	Mayhem	1
Burglary	60	Perjury	6
Burglary, first degree	130	Petit larceny and prior conviction	13
Burglary, second degree	150	Rape	9
Burglary and grand larceny	8	Robbery	127
Burglary and prior conviction	12	Robbery and arson	2
Buggery	2		
Counterfeiting	7	Total	1,205
Embezzlement	8		

TABLE No. 4.

Terms of Imprisonment.

Term.	Number.	Term.	Number.
Six months	2	Thirteen years	11
Nine months	1	Fourteen years	21
One year	77	Fifteen years	50
One and one half years	14	Sixteen years	2
Two years	118	Seventeen years	2
Two and one half years	6	Eighteen years	6
Three years	120	Twenty years	26
Three and one half years	6	Twenty-one years	1
Four years	85	Twenty-two years	4
Four and one quarter years	3	Twenty-three years	1
Four and one half years	3	Twenty-four years	3
Five years	176	Twenty-five years	9
Five and one half years	1	Twenty-eight years	2
Six years	45	Thirty years	7
Seven years	53	Thirty-six years	1
Seven and one half years	6	Forty years	2
Eight years	45	Forty-five years	1
Nine years	15	Fifty years	1
Ten years	121	Life	131
Eleven years	6		
Twelve years	21	Total	1,205

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TABLE No. 5.

Age of Prisoners.

Age.	Number.	Age.	Number.
Thirteen years	3	Forty-one years	37
Fourteen years	2	Forty-two years	25
Fifteen years	3	Forty-three years	20
Sixteen years	3	Forty-four years	21
Seventeen years	19	Forty-five years	19
Eighteen years	13	Forty-six years	10
Nineteen years	37	Forty-seven years	10
Twenty years	40	Forty-eight years	9
Twenty-one years	35	Forty-nine years	8
Twenty-two years	37	Fifty years	6
Twenty-three years	45	Fifty-one years	6
Twenty-four years	57	Fifty-two years	6
Twenty-five years	55	Fifty-three years	4
Twenty-six years	50	Fifty-four years	3
Twenty-seven years	40	Fifty-five years	3
Twenty-eight years	45	Fifty-six years	2
Twenty-nine years	60	Fifty-seven years	3
Thirty years	50	Fifty-eight years	2
Thirty-one years	70	Fifty-nine years	1
Thirty-two years	40	Sixty years	2
Thirty-three years	39	Sixty-one years	1
Thirty-four years	37	Sixty-two years	1
Thirty-five years	65	Sixty-three years	1
Thirty-six years	42	Sixty-seven years	1
Thirty-seven years	30	Seventy-two years	1
Thirty-eight years	25	Seventy-four years	1
Thirty-nine years	25		
Forty years	35	Total	1,205

Table No. 5—Continued.

Educational Abilities of Prisoners.

Read and write	860
Read and cannot write	47
Neither read nor write	298
Total	1,205

TABLE No. 6.

Number of Prisoners from each County.

County.	Number.	Per Cent.	County.	Number.	Per Cent.
Alameda	76	6.32	San Bernardino	18	1.49
Amador	12	.99	San Diego	15	1.24
Butte	31	2.58	San Francisco	414	34.37
Calaveras	15	1.24	San Joaquin	53	4.41
Colusa	7	.58	San Luis Obispo	15	1.24
Contra Costa	19	1.58	San Mateo	4	.34
Del Norte	2	.16	Santa Barbara	12	.99
El Dorado	7	.58	Santa Clara	61	5.07
Fresno	20	1.66	Santa Cruz	8	.66
Humboldt	7	.58	Shasta	18	1.49
Inyo	4	.34	Sierra	4	.34
Kern	27	2.24	Siskiyou	14	1.16
Lake	5	.42	Solano	16	1.33
Lassen	1	.08	Sonoma	23	1.91
Los Angeles	56	4.65	Stanislaus	13	1.07
Marin	8	.66	Sutter	3	.25
Mendocino	7	.58	Tehama	14	1.16
Mariposa	6	.50	Trinity	1	.08
Merced	9	.75	Tulare	20	1.66
Mono	6	.50	Tuolumne	13	1.07
Monterey	24	1.99	Ventura	13	1.07
Nevada	16	1.33	Yuba	11	.91
Napa	18	1.49	Yolo	8	.66
Placer	26	2.16	Carson, Storey County, State of Nevada	1	.08
Plumas	3	.25			
Sacramento	15	1.24			
San Benito	6	.50	Totals	1,205	100.00

Table No. 6—Continued.

Number of Terms.

Prisoners serving their first term	925
Prisoners serving their second term	186
Prisoners serving their third term	52
Prisoners serving their fourth term	25
Prisoners serving their fifth term	8
Prisoners serving their sixth term	7
Prisoners serving their seventh term	2
Total	1,205

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TABLE No. 7.

Occupation of Prisoners when Received.

Occupation.	Number.	Occupation.	Number.
Bookbinder	1	Merchant	2
Baker	9	Miller	1
Brickmaker	7	Machinist	4
Bookkeeper	4	Musician	2
Barkeeper	4	Marble polisher	1
Barber	13	Matchmaker	1
Blacksmith	13	Printer	9
Brushmaker	1	Plumber	4
Butcher	16	Potter	1
Boxmaker	2	Plasterer	4
Brickmason	5	Painter	18
Bootblack	2	Physician	2
Buckskin dresser	2	Photographer	1
Broommaker	1	Professor and astrologer	1
Cook	80	Peddler	1
Carver	1	Phonographer	1
Calker	1	Railroad employé	2
Carpenter	23	Ship carpenter	3
Cigarmaker	15	Sashmaker	2
Clerk	16	Seamstress	1
Cabinetmaker	5	School teacher	1
Cooper	7	Stonemason	1
Carder	1	Sailor	21
Chairmaker	2	Steward	1
Coach driver	1	Servant	1
Carriagemaker	1	Stonecutter	1
Domestic	9	Salesman	1
Dentist	2	Shoemaker	29
Dairyman	3	Sea Captain	1
Dyer	1	Sailmaker	1
Engineer	9	Sodamaker	1
Farmer	56	Soldier	1
Fisherman	1	Sawyer	1
Florist	1	Surveyor	1
Fireman	3	Turner	1
Furniture polisher	2	Teamster	23
Foundryman	1	Tobacconist	1
Gardener	7	Tailor	19
Gasfitter	3	Telegraph operator	2
Gunsmith	2	Tinsmith	6
Grocer	1	Trunkmaker	1
Harnessmaker	11	Tanner	1
Hostler	16	Upholsterer	4
Herder	2	Vaquero	20
Horseshoer	2	Veterinary surgeon	1
Hack driver	1	Washman	51
Hatter	2	Weaver	2
Hunter	1	Wheelwright	1
Ironer	2	Waiter	13
Laborer	515	Watchman	1
Lather	1	Wireworker	1
Lithographer	2	Woodsman	2
Laundryman	3	Whipmaker	2
Molder	4		
Miner	34	Total	1,205

TABLE No. 8.

Statement of Clothing, etc., Issued by Turnkey's Department, from July 1, 1881, to July 1, 1882.

Date.	Woolen Pants.	Woolen Shirts.	Hickory Shirts.	Shoes.	Hats.	Blankets.	Yards of Bed Ticking.	Boots, Shoes, to Order.	Repairs, Boots, Shoes.
1881.									
July	195	184	5	222	96	31	229	9	37
August	205	176	4	180	96	6	226	7	51
September	218	205	28	140	74	22	114¾	12	34
October	250	200	24	169	118	44	224	9	59
November	260	290	23	149	97	124	230	8	63
December	251	241	24	184	99	97	116½	6	57
1882.									
January	172	159	16	175	91	66	56¾	8	62
February	242	233	8	165	66	88	230½	8	35
March	241	224	9	158	85	17	105¾	4	53
April	251	236	14	193	106	55	114¾	2	48
May	215	211	18	181	120	57	172	10	60
June	238	214	22	145	87	48	230¾	8	49
Totals	2,738	2,573	195	2,061	1,135	655	2,050¾	91	608

NOTE.—Issued during the year—169 blanket coats; 11 overalls; 11 jumpers. Issued to prisoners upon their discharge from the prison, and made to order—231 coats, 269 vests, 279 pants.

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REPORT OF THE PHYSICIAN

OF THE

State Prison at San Quentin, California,

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PHYSICIAN'S REPORT.

Hon. J. P. Ames, Warden:

DEAR SIR: The following report from the Hospital Department is respectfully submitted with much satisfaction. It shows a mortuary percentage, and a clinical average (the former only one per cent per year; the latter, six hospital patients per month), that in themselves alone are highly commendatory of the management of the prison. With these twelve hundred prisoners, many of whom come here broken down in health by the diseases and injuries incident to a vicious life, it would not be in the power of medicine, nor in the highest medical skill, to make such a favorable record, without the assiduous watchfulness on the part of the administration in almost every detail; in the kind and quality of food, that has been abundant, wholesome, and properly prepared; in the reconstruction and careful daily cleansing of the sewers, so effectually as to leave no trace of septic gases, nor even an offensive smell, in this vast illy constructed prison; in a rigid enforcement of cleanliness in the person, cell, and clothing of every prisoner; in a most humane and gentle, yet sternly effective discipline of the viciously refractory, thus preventing casualties that would swell our sick and death lists; in a vigilant espionage upon smuggling and smoking opium, almost entirely eradicating this fiendish practice so destructive to health. And more, perhaps, than all these in preventing disease is the vigilance with which is enforced a complete system of prison industry. Every man who can work is kept steadily at work, not penally, but productively, and with that inspiration of interest in his work which makes labor conduce both to health and to the reformation of character. And labor thus made attractive has relieved me to a great extent of that troublesome class of sickness simulators, usually so numerous in penal institutions. I have been aided in making this remarkable health record, as far as possible, by all under your authority, and I take this opportunity to thank the Prison Directors for the interest they have manifested in the success of the Hospital Department. Harmony and oneness of aim to succeed throughout the whole institution have secured to us the proverbial strength of union. And by a good deportment on the part of the prisoners, with but few exceptions, they have shown their appreciation of these combined efforts for their welfare, as well as for the protection of society.

I refer to the State Clerk's report for an account of the expenses of the Hospital.

Table No. 1 of this report shows the number of disabled and the causes of their disability. The disabling cause in every instance obtained before their arrival here. This table should be taken note of in the estimation of your productive resources.

Table No. 2 includes all cases coming under my notice for treat-

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ment. With but few exceptions all these diseases were contracted before their victims came to this prison. The same is true with reference to the cause of death in Table No. 3, excepting two suicides and a case of sub-acute meningitis. Diseases designated "unclassified" are all those numerous ephemeral complaints, seldom interfering with duty, and requiring but little attention.

INSANE.

I have to report also that during the year we have sent three insane prisoners to the Insane Asylum at Napa. Our hospital has no provision, without serious inconvenience to the sick, for the accommodation of the insane. Nor can this class of prisoners receive proper care or treatment in their cells. We have others partially insane who should not be detained here. But our Insane Asylums at Stockton and Napa are already overcrowded, and, therefore, this unfortunate class must remain where necessity excludes the benign influences of the advanced philanthropy of the age.

TABLE No. 1.

Causes.	Number.	Causes.	Number.
Disabled.		*Partially Disabled.*	
Crippled	13	Crippled	19
Syphilis, secondary	23	Syphilis, secondary	29
Scrofula	22	Scrofula	31
Bronchitis, chronic	6	Bronchitis, chronic	16
Phthisis Pulmonalis	9	Phthisis Pulmonalis	4
Paralysis	5	Paralysis	3
Asthma	4	Asthma	9
Rheumatism, chronic	14	Rheumatism	51
Aneurism	1	Hernia	21
Gunshot wounds	7	Opium habit	104
Hernia	10	Aneurism	2
Opium habit	15	Gunshot wounds	17
Partially insane	24		
Total	153	Total	306

Disabled, 153; partially disabled, 306. Total, 459.

TABLE No. 2.

Patients Treated.

Diseases.	Quarter ending Sept. 30, 1881.	Quarter ending Dec. 31, 1881.	Quarter ending Mar. 31, 1882.	Quarter ending June 30, 1882.	Total.
Asthma	4	1	5	3	13
Ascarides	4	3		3	10
Abscess	14	6	7	5	32
Bronchitis	18	7	2	8	35
Biliousness	23	7	25	18	73
Burns and scalds	1		5		6
Contusions and sprains	26	41	42	30	139
Catarrh	8	5	7	2	22
Constipation	47	43	32	67	189
Conjunctivitis	1				1
Carbuncle		1			1
Diarrhea	41	20	28	17	106
Dysentery	9	2	5	2	18
Dislocation				2	2
Debility	28	15	9	3	55
Dropsy			1		1
Dyspepsia	13	6	3	2	24
Epilepsy	1	2	2		5
Eczema	11	4	9	2	26
Erysipelas	1		2	4	7
Erythema				1	1
Fistula	2		1	3	6
Fever, remittent	38	25	16	20	99
Fever, intermittent	9	4	2	4	19
Fracture	1		1	2	4
Gunshot wounds	2	1	2		5
Gonorrhœa	1	3	11	4	19
Hernia	6	3	10	7	26
Hæmoptysis	12	11	8	8	39
Hemorrhoids	6	3	6	4	19
Herpes	2				2
Influenza	18	26	30	19	156
Indigestion	9	3	5	7	24
Lumbago	2	3	2	1	8
Measles			6	13	19
Neuralgia	15	12	13	5	45
Ophthalmia	8	11	12	5	36
Opium habit	35	29	18	37	119
Orchitis	2				2
Pruritis	1				1
Poison Oak	2		1	2	5
Paralysis	3		1		4
Phthisis Pulmonalis	9	8	9	6	32
Pleurisy	1				1
Pneumonia	2	1	1		4
Rheumatism	73	49	67	28	217
Scrofula	17	14	9	13	53
Syphilis	15	7	16	14	52
Stricture	13	1			14
Tonsilitis	1			2	3
Tenia Solium		1		1	2
Varicose Veins	4	1			5
Wounds, lacerated	19	17	19	7	62
Wounds, incised	14	7	6	3	30
Wounds, punctured		1		2	3
Classified diseases	655	384	446	366	1,851
Unclassified diseases	442	211	294	280	1,227
Totals	1,097	595	740	646	3,078

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TABLE No. 3.

Deaths and Causes thereof.

Nativity.	Disease.	Date.
California	*Scrofula	July 9th, 1881.
California	*Phthisis pulmonalis	July 23d, 1881.
California	*Phthisis pulmonalis	September 4th, 1881.
Oregon	*Scrofula	October 23d, 1881.
Illinois	*Phthisis pulmonalis	November 17th, 1881.
Virginia	*Gunshot wound	November 21st, 1881.
China	*Phthisis pulmonalis	November 27th, 1881.
California	*Pneumonia	December 19th, 1881.
Alabama	*Phthisis pulmonalis	February 18th, 1882.
Germany	*Paralysis	February 18th, 1882.
Switzerland	Suicide	March 27th, 1882.
California	Pyemia	April 17th, 1882.
California	Sub-acute meningitis	May 9th, 1882.
Alabama	Suicide	June 14th, 1882.
Total		14.

* Diseases contracted before entering prison.

TABLE No. 4.

	Quarter ending September 30, 1881.	Quarter ending December 31, 1881.	Quarter ending March 31, 1882.	Quarter ending June 30, 1882.	Total.
Number in Hospital at first of quarter	12	6	3	0	
Number admitted to Hospital	19	16	11	26	72
Number discharged from Hospital	22	14	12	20	68
Number died in Hospital	3	5	2	2	12
Number remaining at last of quarter	6	3	0	4	

N. J. BIRD, M. D.,
Resident Physician.

REPORT OF THE MORAL INSTRUCTOR

OF THE

State Prison at San Quentin, California.

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REPORT OF THE MORAL INSTRUCTOR.

To the Hon. J. P. Ames, Warden:

DEAR SIR: I have the honor to submit herewith the annual report of the Moral Instructor of the prison for the year ending June 30, 1882. Although I have only been in charge of the position since the first of last November, yet the statistics given will cover the entire year.

SCHOOL DEPARTMENT.

When I first entered upon my duties I found eleven boys under instruction in the school. Additions were made from time to time by new comers until there were seventeen in attendance. There are nearly forty in the prison under eighteen years of age who are attached to this department, so far as police regulations are concerned, and to these I shall presently allude more particularly. The school boys, more especially those under the charge of the Moral Instructor, came from all parts of the State, except San Francisco, where juvenile offenders are sent to the Industrial School, and not to the State Prison. The crimes for which these boys were sent here are various, principally burglary, robbery, and larceny. Their ages at committal were from fourteen to eighteen years. Very soon after entering upon my charge I was satisfied that some manual labor should be connected with their studies. A few appreciated the advantages of the school, and made satisfactory advances in learning. The greater number, however, cared little or nothing for the privileges they could have enjoyed, and could only be kept at their studies and out of mischief by the fear of punishment. Appeals to their better nature were little more than idle words. Hence my cordial assent to your suggestion that manual labor should be assigned to them as part of each secular day. This was carried into effect early in the present year, the work being the seating of cane-bottomed chairs. Four hours in the middle of the day were assigned to this work, the hours before and after being still devoted to the usual studies pursued in the school. Most of the boys became quite expert in their work, and in a few days performed it satisfactorily. The beneficial effects of this partial physical labor were clearly seen, and one who constantly observed them, as it was my duty to do, could but come to the conclusion that constant work would be still better. After the jute factory was in full and successful operation, drafts were made from the boys in the school, until, at the present time, there are only six attached thereto. I believe the change has been beneficial to the boys. In the factory and workshops, if they so choose, parts, at least, of a trade can be learned, and they thus be

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enabled to earn a livelihood when they leave the prison. Many of the boys under eighteen are becoming quite expert spinners and weavers, and the constant attention which they must give to their work saved them from the curse indicated in the old couplet—

For Satan still will find some work
For idle hands to do.

While theoretically, then, it may seem that it would be better for all of these boys to be in school, my observation leads me to the conclusion that your policy, in putting all the able-bodied boys at work in the factory and workshops, was wise and judicious. Their physical health has been improved, and the inducement held out for future usefulness, as well as present profit, though the latter be very small, works well morally also, upon most of them. Those who "care for none of these things," and have no desire to be other or better than what they were when coming here, are under a stricter and more wholesome discipline than they possibly could be in the school room, with so much of idle time on hand. I do not ask, then, or suggest any change in the present policy, believing it to be the best for the boys, and best for the prison and State.

I stated that all the boys, including in this designation all under eighteen years of age, are, as to police regulations, considered as belonging to my department. Not for your own information, for you are well aware of the fact, but to inform those outside who may read this report, as to the actual discipline to which the boys are subjected, I will briefly state what it is. It has been charged by persons outside, who were certainly ignorant of the facts, that these boys were allowed to mix indiscriminately with the men—more hardened criminals, as they allege—that this intercourse was by day and by night, and the boys were thus schooled in greater depravity than would otherwise mark them. Whether that would be the result, were such the fact, I will not undertake to say. But so far as the prison management is concerned, every precaution possible is taken to keep the adults and boys separate. These last are under the charge of a special guard or policeman. They are marched in a body, and separately from the men, from their cells to the library in the morning; from thence to each of their meals, where they do not sit with or speak to the other prisoners; and at night are marched to their cells under the same charge; where each has a separate cell, which, I may here remark, every prisoner should have, but as the State does not permit the necessary means therefor it cannot be done. As to the boys, also, the attendance upon public worship on Sunday is obligatory; they go to and from the chapel in a body, under the charge of the same special policeman. The only time then when they do meet or associate with the men, is in the shops or factory, and any one who visits either, will see in a moment how meager must be the opportunities they can then have for converse, plottings, or conspiracies. I have made these statements to show the special care taken by the prison authorities to protect these juvenile convicts, and save them from further contamination, if possible. If the good people outside would be as assiduous in their endeavors after the release from prison, I am quite sure that a far less number would be returned here for a second and third term, than is now too often the case. And I may add that the same remark will apply as truthfully to the adults as to the juveniles.

LIBRARY DEPARTMENT.

The Library continues to be a popular feature of the prison, if I may judge from the interest taken therein by the prisoners. It is entirely, as I understand it, the gift of benevolent individuals, no appropriation by the State, so far as I know, having ever been made. I am told that it owes its origin to the zealous efforts of the late Rev. Noah Burton, who for twenty years gave his earnest and free labors, for the benefit of the prisoners, preaching here once a month during all that time. He was the unwearied friend of the unfortunate confined, and no man could be more beloved by those outside of his family than was this eminently good man by the prisoners. He died in the prison hospital, in January last, having been carried there at his own request, that those he loved and who loved him might minister to him. The prisoners called him Father Burton, and many were the tears shed by these objects of his care, when he breathed his last. I wish, for his sake as well as for that of the prisoners, that the library could be at least double its present size, for I believe its moral effect is good upon the prisoners. If not presumptuous, I would suggest that the next Legislature be asked to make an annual appropriation of $500 or $1,000, to be expended in the purchase of new books for the library. I am sure that the money would be most judiciously and wisely expended.

I give the statistics of the library for the past twelve months:

Number of volumes therein on the first day of July, 1881, 3,063; on the first day of July, 1882, 3,897—being a net increase of 834. Some volumes have been condemned and removed. The increase during the several months, separately, has been as follows: July, 1881, 17; August, 3; September, none; October, 32; November, 48; December, 100. January, 1882, 31; February, 24; March, 69; April, 229; May and June, 272. Number of books drawn from the library during the year, 15,628—being an average of 1,303 each month. The library is divided into two compartments: the general has 2,598 volumes, and the Catholic, 1,304.

During the first month of my incumbency, an appeal was made to the public for donations to the library. The response, from time to time, has been very liberal, though I could have wished that it had been tenfold greater. The largest donations have been received from the Mechanics' Library of San Francisco; from the Rev. Mr. Mathews, of Onanga, Illinois, who is agent for the Prison Commission for several of the States bordering on the Mississippi. He generously sent us three large boxes full of books, magazines, and papers, the several railroad companies between Chicago and San Francisco conveying them free of charge. Other large donations have been from the Hon. Charles Clayton (a large assortment of Congressional documents); Giles H. Gray, Esq., of San Francisco, of many very valuable books; and from many other kind donors, including the Rev. James Woodworth, Secretary of the California Prison Commission, who has kept us well supplied with old papers. To one and all, the thanks of the undersigned, for himself and for the prisoners, are cordially returned. In the aggregate, the donations have been as follows:

DONATIONS.

Books, 1,084 volumes; magazines and pamphlets, 2,879; old papers

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(miscellaneous), 14,597; old papers (religious), 6,698. Most of the religious and literary papers have been bound in parcels, and are often asked for by the prisoners, instead of bound volumes. I will here state that old magazines of every kind, no matter how old and soiled, if only unmutilated, are always acceptable. There is a bindery in this department, in which all such can be bound, and these form one of the most attractive features of the library.

BINDERY.

The bindery has been under the immediate charge of one of the prisoners during the year, and his work has been well and satisfactorily done. The press used is so small that only a limited amount of work can be done at any one time, and the binder is often forced to be idle in consequence. If the press was larger, he could do double the work now turned out. Some of the magazines sent are still unbound for this reason. Many of the volumes belonging to the shelves have been repaired. The work of the bindery has been as follows: New books bound, 231; old works bound and repaired, 243; copy-books made, 357; memorandum tablets for the several offices, 434; catalogues made, 7; books bound for outsiders, 7; papers, religious and others, bound with paper covers, 280 parcels.

RELIGIOUS SERVICES.

These are held in the chapel every Sunday morning, immediately after breakfast, the time ranging from seven and a half o'clock in Summer to eight and a half in Winter. On the first and fifth Sundays in the month I officiate; on the second, the Catholic priest, Father Picardo, from San José; on the third, the Rev. James Woodworth, Secretary of the Prison Commission: and on the fourth, which was Father Burton's day for twenty years, Rev. Mr. Woodward, the Methodist minister at San Rafael, now officiates. The attendance is voluntary on the part of the men, and varies from two hundred to two hundred and seventy-five each Sunday. The boys under eighteen, as I have already stated, must attend. Though not at all sanguine as to the immediate or any very palpable good effects from these services upon the prisoners, I believe they are of much benefit to all who attend. The prisoners are very orderly and attentive, and seem to appreciate the efforts thus made to lead them in a better way than that in which they walked before their incarceration. When the Catholic priest celebrates mass, which he does at every visit, about twenty, on an average, partake thereof. His counsels and advice to the prisoners are always good, and so are those of the other ministers who officiate, and in every way in my power I try to help along the good influence of their teachings. On the holy religion of my God and Savior do I alone rely for permanent reform in any case. It will not fail here, or if so, it will be the fault of those who present it, and not of the religion itself. What the prisoners especially need is not emotional addresses or appeals, nor the dry husks of mere theological dogmas, but the plain, practical preaching of the precepts of the Gospel, the only code of morality that can redeem one from the ways of the transgressor.

REFORMATION.

I trust that it will not be considered as going outside of the proper limits of this report, if as the Moral Instructor, I say a few words in answer to the questions so often asked: "Do the prisoners reform?" "Will they lead different lives when released?" "Are there any hopeful cases?" It needs the daily study of the men in prison, and that for months, before one can be fully satisfied in his own mind as to the answers to be given to these questions. I wish I could speak as plainly to those outside of the prison and its management as I can to those within. To insure reform, several things are necessary:

First—The State should furnish a cell to each prisoner.

Second—The prisoners must desire and determine to reform.

Third—The officers in charge should help in the work of reformation.

Fourth—Christians and philanthropists in the world outside should also help, and not by cold looks and colder action drive the discharged prisoners again into crime.

I believe that every Warden who has had charge of the prison, has asked for the first, but without success. The "almighty dollar," in the shape of possibly increased taxes, has induced every Legislature to turn a deaf ear to the recommendations of those who must, of necessity, know best. Though it may cost thousands of dollars, there should be no hesitation in this, on the part of the lawmakers. As to the second element, there is a great misapprehension on the part of the people generally. It seems to be taken for granted, that all who are here deserved their punishment, and should be kept from further harm by indefinite imprisonment. This is a great mistake. Some of the inmates here are undoubtedly innocent, having been the victims of perjury or mistaken identity. These may be few in number. The great majority of the prisoners, however, are here for the first time—at least three fourths of the whole number. A mistaken impression is abroad as to this. It is not true, as often asserted and believed, that a large or even any majority return for the second, third, or fourth time. Not one fourth do so. This would seem to be proof positive, that the majority not only resolved to lead a different life after release, but carried their intention into practice. And facts are always more conclusive than fictions.

As to the third requisite, I can bear testimony that the officers do their duty, and wish to help the prisoners to do well, not only in the prison, but out. And if their efforts were as earnestly seconded by outsiders, there would be little necessity to ask any of the above named questions. And right here is met the greatest obstacle in the way of reform of prisoners; for I must answer the question involved in the fourth position, by saying that Christians and philanthropists outside, though plentiful in lip service, do not help the prisoners to reform, but passively, if not directly, lend their influence to drive them back to crime and punishment. This is a bold charge, I know, but unfortunately it is true. No matter how well an inmate may conduct himself while in prison, nor how sincere he may be in his efforts and determination to reform and lead a better life, he goes out with the prison taint upon him. He applies for work, and honestly tells where he has been. With very few exceptions he is immediately rebuffed. In vain does he plead his reformation and determination, and show his certificate of good conduct from the

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prison officers. "I pray thee, have me excused," is what he hears on every side. Tempters to crime are neither scarce nor fastidious, and thus repulsed by those who claim, morally, to be the better class, it is not strange if he is again drawn aside from the right path, and returns here more hardened than ever, on account of his repulse by those from whom he had a right to expect better things. That is one obstacle in the way of his reform.

But suppose, to avoid this, he simply conceals the fact that he has been an inmate of the State Prison. He secures work as a mechanic, or clerk, or laborer, and is honest, industrious, and faithful. A short time only elapses before he is "spotted" by some depraved ex-convict, and "blackmail" is demanded on threat of exposure. If he resists the claim, and is still trusted, notwithstanding the exposure made as threatened, it is well. But how often is that likely to be the case? Not one time in twenty, I am sorry to say. If he submits to the demand of the ex-convict, then he is at his mercy, and will be driven to desperation, if not to suicide, by further and still more exacting demands. Nor is this the other side of the picture. Can he escape Scylla and not fall into Charybdis?

And I am sorry to say there are some—not all—of the police in San Francisco and other large cities, who seem to take a delight in pointing out these poor unfortunates as "State Prison birds," and thus drive them from honest work into crime. What wonder, then, that the percentage of real and permanent reform is not as large as could be desired. I feel like saying to these outside fault-finding philanthropists, "Physicians, heal yourselves," ere throwing upon the Prison Officers or Directors the blame of failure in efforts to reform. Let outsiders do their duty as men and as Christians, and I believe that nearly all of those sent here for the first time would reform and lead honest, if not true, godly, Christian lives when restored to liberty. I hope to live to see the day when this shall be the actual fact, and not merely a picture of the imagination.

The employés in my department are one Assistant Librarian, one Bookbinder, one Teacher, and one Janitor—all prisoners.

Respectfully submitted.

WM. H. HILL,
Moral Instructor.

SAN QUENTIN, July 1, 1882.

REPORT OF THE WARDEN

OF THE

State Prison at Folsom, California.

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REPORT OF THE WARDEN.

WARDEN'S OFFICE,
STATE PRISON AT FOLSOM, July 1, 1882.

To the Honorable State Board of Prison Directors:

GENTLEMEN: I have the honor to present herewith my report for the year ending June 30, 1882. As four months of the fiscal year had passed when I was chosen by your honorable Board to discharge the duties of Warden, the minutes of the Clerk, and the documents on file are referred to for information about transactions previous to November 1, 1881. In order to proceed intelligently with the work of completing the prison grounds, inquiry was made for the plans of the architect, but none were to be found, though there was evidently a design to make some such inclosure as is shown in the "Isometrical View of the Prison Yard and Buildings" drawn by Mr. R. C. Ball, the first architect. In changing from the plans originally adopted, the yard seems to have been overlooked by Mr. Bennett, the second architect, and Mr. Ball's plans have disappeared. It is plain, however, that the original plans could not well be carried out, as an immense high ledge of granite has been discovered where the isometrical view provides for a level yard surrounding the workshops. In the absence of any architect's plan, and desiring to avoid the expense of heavy masonry (for which there is no appropriation), an improvised plan was adopted, so that the grading and filling could be carried on to the best advantage. The ravine in which the prison is situated can be made into a prison yard of about ten acres by building four hundred and eighty feet of stone wall on the west side, facing the river, and about two hundred and fifty feet of wall on the east side, joining, in each case, the natural wall formed by grading the steep hillsides. This inclosure can be made to serve until a more complete barrier shall be built, and I respectfully recommend that the Legislature be requested to make provision for a secure inclosure as soon as possible.

Inside the inclosure, in front of the prison building, is a precipice of fifty-three feet, which needed to be secured by a stone bulkhead, to prevent the earth from caving into the basin below in wet weather, or required some effective arrangement of terrace, to serve the same purpose. The latter plan was resorted to, and an ingenious prisoner, who proves to be a first-class gardener and practical architect, has converted what was an unsightly dumping place into a series of terraces, with grassy slopes, bordered with beautiful flowers, which will make the great embankment as secure as if held in place by stone walls. This has been done with convict labor, with-

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out any outlay except for grass seed, the plants being the gift of public spirited citizens. When this work shall be finally completed, the front of the massive granite prison will be brought into picturesque relief, when viewed from any point on the river bank, and will challenge admiration as one of the handsomest public buildings in the State.

A number of prisoners were employed for many months in constructing, through the ravine, the immense stone sewer, which is necessary to carry off the torrent of water that rushes down in the Winter time; it also affords drainage for the prison.

Another lot of prisoners were employed in clearing away the dense chaparral outside of the guard lines, and from the land thus reclaimed the experiment of raising grain for hay was tried, with the view of supplying the needs of the prison, and if the land should be found available, to prepare for more extensive farming on the tract of four hundred and eighty-three acres embraced in the deed for the site. The farming experiment proved a notable success. A larger area can be put under cultivation, and a surplus of hay will be assured next year. About ten thousand grape cuttings have been set out and are growing.

Other prisoners have been employed in grading, in gardening, in making shoes for the prisoners, in making the clothes, in washing, in carpentering, in the blacksmith shops, in engine room, in painting, tinning, whitewashing, stable work, on new reservoir, and in the quarries. A great deal of stone was needed for the sewer and the pump-house, and while opening the granite quarry to provide the necessary stone, it was deemed advisable to get out the blocks for the coping for the fence around the Capitol grounds at Sacramento. Several shipments of stone have been made; the stone has been dressed, and is now in place on the Tenth Street line of the Capitol grounds. There is necessarily a great deal of rough stone coming out of a newly opened quarry, but there is also some very good granite, and each day's work gives assurance that a large bed of first class granite will be reached in a short time. The granite is susceptible of a very high polish, and will make very handsome ornamentation for all kinds of buildings. If it can be put on the market at reasonable figures, it will be much sought after for buildings of the character of the Real Estate Associates' edifice in San Francisco, or the Stock Exchange, or Nevada Bank. The convicts become adepts in this kind of work, and many of them do as much work as a free man can do in the same number of hours. Besides, they create something that cannot be brought into use without their labor, and will in no way interfere with the labor of any citizen. In addition to quarrying the stone, the convicts could be profitably employed in dressing and polishing it, so as to ship the blocks with the minimum of weight to the point where the stone is to be used. Nominally, a prisoner's labor is rated at fifty cents a day, but convicts can earn for the State a much better return, as some will drill ten three-inch plug holes per hour, and in a day of eight hours can earn equal to two dollars. While quarrying stone for market, the refuse can be used for the wall, and for the construction of buildings for shops where manufacturing can be carried on.

The only source of income, thus far, is from the sale of stone for the Capitol fence, and it is desirable that some plan should be devised for employing the labor of the convicts so as to make the prison self-

supporting. With the power to be obtained from the flow of water through the canal of the Natoma Water and Mining Company, machinery can be driven without outlay of any kind, and therefore manufacturing can be carried on very cheaply. Farming can be carried on to a limited extent at a profit; and with an artesian well, for irrigation, a great many needful articles can be raised; even the few acres of grapes on the hillside will soon be bringing returns for the small investment.

About the middle of December, 1881, the Folsom Water Power Company, as assignee of the Natoma Water and Mining Company (with which company the State of California had made a contract on the thirtieth day of June, 1868, to pay the purchase price of the prison site in convict labor at fifty cents per day), made a requisition for prisoners to assist in building the canal which is to furnish water power for the prison. The number of convicts required has been increased as the work progresses, and at this time an average of eighty convicts are employed in cutting through the vast ledge of granite that will serve as a gate for the waters to pass through from the dam into the canal. Good work has been done by the convicts in furtherance of this great enterprise. The labor is furnished as directed by your honorable Board to the company in accordance with the terms of the following deed:

NATOMA WATER AND MINING COMPANY
TO
THE STATE OF CALIFORNIA.

This indenture, made this thirtieth day of June, 1868, between the Natoma Water and Mining Company, a corporation duly incorporated under and by virtue of the laws of the State of California, and having its principal place of business in the village of Folsom, in said State, party of the first part, and the State of California, party of the second part, witnesseth: That the said party of the first part, for and in consideration of the sum of one dollar, lawful money of the United States, to it in hand paid by the second party, receipt whereof is hereby acknowledged, and in further consideration of fifteen thousand dollars ($15,000) in convict labor, rated at fifty cents per diem, to be furnished to said first party in aid of its water power canal enterprise by said party of the second part, but only at the convenience of the State and whenever it may be deemed advisable and judicious by the Board of State Prison Directors of said State, has granted, bargained, sold, conveyed, and confirmed, and by these presents does grant, bargain, sell, convey, and confirm unto the said State of California, forever, all that certain piece or parcel of land situate, lying, and being in Granite Township, Sacramento County, State of California, and being a portion of the larger tract patented by the United States Government, under the name of "Rancho Rio de los Americanos," the portion thereof herein conveyed being particularly and specifically described as follows, to wit: Beginning at a point on the east boundary line of said rancho, fifteen feet from where said line projected northwardly intersects the American River at high water mark; thence along said east boundary of said rancho south seventy-five (75) chains and fifty (50) links to a point; thence at a right angle west to a point within ten feet of the eastern line of water canal of the Natoma Water and Mining Company, which said canal is near the eastern bank of the American River; thence northerly along said canal, and ten feet from the eastern line thereof, to a point ten feet above the dam across said American River, constructed by and belonging to said Natoma Water and Mining Company; thence at a right angle westerly to a point fifteen (15) feet above the American River at high water mark; thence along said river northeasterly, following its meanderings, on a line fifteen feet above high water mark to the place of beginning, containing three hundred and fifty (350) acres of land; together with all and singular, the tenements, hereditaments, and appurtenances thereunto belonging, or in anywise appertaining, with the timber standing thereon and the granite quarries contained therein, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof, and also all the estate, right, title, interest, property, possession, claim, and demands whatsoever, as well in law as in equity, of the said party of the first part, of, in, or to the above described premises, and every part and parcel thereof, with the appurtenances; also, the exclusive right forever to the use of the first fall five feet perpendicular of the whole water of the canal at the upper end of that place, on the canal known as "Prison Yard," with all rights, privileges, and easements necessary for the taking and enjoyment of power from said fall, it being understood that the said party of the first part reserves to itself the subsequent power resulting from the flow of water in said canal after the first fall as aforesaid, and that this instru-

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ment is not to be construed as granting unto said State the right to divert said water or any material quantity thereof permanently from said canal. To have and to hold all and singular the above mentioned and described premises, together with the appurtenances, unto the said State of California forever. And the said party of the first part warrants the said premises to be free from all and every incumbrance of any kind, character, or description, and against any and all incumbrances now existing upon said premises created or suffered by said party or by any other party will forever warrant and defend. But in accordance with the resolutions upon the Branch State Prison location passed by the Board of State Prison Directors on the eighteenth day of June, A. D. 1868, the above grant of water power is upon condition, always, that said Board of State Prison Directors do furnish and supply at such times and in such manner as it may deem advisable and judicious, fifteen thousand dollars in convict labor rated at fifty cents per diem for each convict employed unto said first party in aid and construction of its water power canal and adjuncts now partially completed along the western line of the lands heretofore described, or so much of the same as may suffice for the completion of dam and canal down to the point of delivering the said water power at the upper part of Prison Yard, as already mentioned.

In witness whereof the President and Secretary of the said Natoma Water and Mining Company, acting for said company, under and by virtue of a resolution passed by the Board of Trustees of said company, at a regular meeting thereof, held at Folsom on the thirteenth day of April, A. D. eighteen hundred and sixty-eight, which said resolution is in the following words, to wit:

Resolved, That the Committee on Prison Site be also authorized to make all arrangements with the Board of State Prison Directors for the location of a Branch Prison upon the company's property, and the President and Secretary are hereby empowered and directed to execute, in behalf of this company, and all deeds and agreements to and with said Board of State Prison Directors in behalf of the State of California, as shall be agreed to between the said Board and this company's Committee on Prison Site.

Which resolution still stands as an order of said Board of Trustees upon the books of said company unrevoked and unrepealed; have hereunto set their hands and seals, the said Natoma Water and Mining Company having no corporation seal, on the day and year first above written. The word "Rio" is interlined between the fourth and fifth lines of the second page before signing.

[SEAL.] HORATIO G. LIVERMORE,
President of the Natoma Water and Mining Company.

[SEAL.] ROGER S. DAY,
Secretary of the Natoma Water and Mining Company.

About eight thousand days' work have been given to the company up to this date, and it is confidently believed that an opening in the rock will be made before the low stage of water in the river, so that work can be commenced on the dam which is to imprison the water to the heighth of forty feet. There seems to be nothing to prevent the delivery of the water through the canal, at the point in front of the prison, by this time next year.

The Physician's report will show that the deaths (other than from casualties) during the year, amounted to five, or less than one and three quarters per cent. of the population. Dr. Henry Gibbons, senior, member of the State Board of Health, with Dr. F. W. Hatch, Secretary of the Board, made an official visit to the prison, and were evidently well pleased with the result of their critical examination. Dr. Gibbons spent nearly three days in the institution, and had unlimited opportunities for observation. In an address to the prisoners on Sunday, he foreshadowed what would appear in his report, which, however, will not be available for present use; but I may be permitted, in view of the high standing of the venerable physician, and his large experience as a philanthropist, to quote from his publication, the Pacific Medical and Surgical Journal, the following expressions of his views:

The senior editor, in company with Dr. Hatch, representing the State Board of Health, recently visited the new State Prison near Folsom. Prejudiced more or less by what had been said of the burning climate and malarial character of the locality, a visitor for the first time is not prepared to find an establishment so free from such influence. As to sickness, it might be said there is none, excepting some trivial disturbance of the digestive organs, not sufficient to

deter from labor. The hospital has but five or six inmates, mostly cases of injury at the quarries. It is the only department of the prison not in a flourishing state. Our old friend and townsman, Dr. W. A. Grover, is the Medical Superintendent, and has devoted his entire energies to the sanitary care of the building and inmates. Great credit is given him by the Warden and officers for his efficient services. Not a case of malarial disease was discovered in or about the institution. This is not the season for such diseases to abound, yet we were informed that the locality had so far been almost entirely exempt from them. Dr. Durant, of Folsom, informed us that a change had taken place in this respect in Folsom and surrounding country, intermittents having diminished, and an autumnal typho-malarial taking their place. The prison apartments are as neat and clean as it is possible for private dwellings to be. Everything about them is watched with sedulous vigilance to remove all offending causes. Water is abundant, being pumped up by steam plentifully and readily from the American River hard by, and is profusely employed. The broom and the whitewash brush are in constant use. The prisoners have the use of a large cistern for bathing and swimming, the water of which can be heated by steam. The ventilation of the cells is excellent, and no odor is perceptible except that of the inevitable tobacco pipe, which is but faint. The prison edifice was planted here in a little nook on the borders of the swift and noisy river, on a bed of rocks surrounded by masses of granite and by rugged hills, covered by chaparral and a few scattered oaks. Within a year, under the charge of General McComb, the energetic Warden, a marvelous transformation has been effected, realizing the idea of a "desert blossoming as the rose." By utilizing the labor of prisoners otherwise unemployed, the grounds in front have been converted into a beautiful flower garden, beyond which is a large garden for vegetables. The prisoners thus employed take pride in their work, and esteem it a privilege. All the prisoners appear as well contented with their lot as can reasonably be expected, and all, including those in the quarries, do their work well and cheerfully. The discipline, though necessarily rigid, is humane and kind. Too much praise cannot be bestowed on the care and tact exhibited by the Warden. A year or two more of his skillful management will establish in the surroundings a fruitful farm, contributing largely to the support of the institution.

The maintaining cost of the prisoners is necessarily higher than it will be when the prison is fully equipped, and of course the per capita rate will be considerably reduced when the full complement of prisoners can be counted in the sum, and each made to bear part of the expense of the first great outlay—the salaries of officers and guards; it costs almost as much to guard 276 prisoners as it will cost to guard 600—the line of sentries must be kept as strong to prevent escapes from the smaller number, where there is no restraining wall. Although a great many extraordinary expenses are necessary in establishing a new prison, for articles which afterward can be produced by the labor of the prisoners, the outlay for the support of the prison has been kept within the appropriation made by the Legislature, and nearly $7,000 turned back into the State Treasury. The report of the Clerk, accompanying this, will give the details of receipts and disbursements.

One item of expenditure should be particularly referred to as indispensable, and not likely to occur again in several years—the purchase of a first-class Hooker pump, which is used to draw water from the American River and force it to a reservoir at an elevation of 150 feet, from which it is sent to the prison through pipes, with outlets where hose may be attached for use in the extinguishment of fire. The water of the river comes from the melting snow in the mountains, and is most desirable for drinking and culinary purposes. To increase the supply for use in case of fire, and to afford means of filtering the water, the excavation for a larger reservoir has been commenced at a greater altitude. From this reservoir of 220,000 gallons the water can be drawn direct, if needed, or be allowed to enter the pipes after passing through the present reservoir, where it will be cleared of impurities by filtering through charcoal and gravel.

In the tables accompanying it will be seen that the average number of prisoners was 290. Of the 310 in prison at this date, 166 were born in the United States, and 144 are of foreign birth; 249 can read

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and write, 7 can read only, and 54 can neither read nor write. Two of the prisoners have passed the threescore and ten years allotted to man; 22 are serving lifetime sentences.

I desire to acknowledge my indebtedness to the members of the Board of Directors for their very considerate treatment of all propositions presented, and to them and to all the officers of the State Government for unvarying courtesy. The officers and attachés of the prison, by their prompt support and cheerful acquiescence in all measures, have made my task of administration a very pleasant one.

Very respectfully,

JOHN McCOMB, Warden.

TABLE No. 1.

Recapitulation of Received and Discharged Prisoners, from July 1, 1881, to July 1, 1882.

Months.	By Commitment	Returned Convict Witness	Escapes Recaptured	Transferred from San Quentin.	Total Receipts	Discharged per Act, and Restored	Discharged per Act	Discharged by Order of Court	Taken out by Order of Court as Witness	Discharged by Commutation	Pardoned by the Governor	Escaped	Died	Suicide	Killed	Sent to Insane Asylum	Taken out by Order of Court for New Trial	Total Discharged	Number of Prisoners on hand at the close of each Month.
1881.																			
July	9		1		10	4	7						1					12	July, 297
August	10				10	4	2						1		1		2	19	August, 295
September	6				6	6	5						1					12	September, 295
October	5	1			6	7	2		1									10	October, 289
November	9				9	12	2											14	November, 285
December	7				7	6	4					1	1					12	December, 280
1882.																			
January	5		2		7	4	4											8	January, 275
February	7				7	10	2	1			1		1					15	February, 274
March	2			60	62	7	2	1									1	11	March, 266
April	7		2		9	5	10			1	2	2	1			1	1	22	April, 317
May	9				9		2									1		3	May, 304
June	9				9	6	1		1			1	1					10	June, 310
	85	1	5	60	151	71	43	2	2	1	3	4	7		1	1	4	139	

Received, 151; discharged, 139. Increase from July 1, 1881, to July 1, 1882, 12.

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TABLE No. 2.

Nativity of Prisoners.

Nativity.	Number.	Nativity.	Number.
Arkansas	1	Austria	1
California	47	Canada	4
Connecticut	2	Chili	1
Georgia	2	China	40
Illinois	5	Denmark	2
Iowa	4	England	16
Indiana	2	East Indies	1
Kentucky	4	France	4
Louisiana	6	Germany	16
Massachusetts	7	Greece	1
Maryland	5	Holland	1
Missouri	6	Ireland	30
Maine	2	Italy	4
Michigan	3	Mexico	5
Mississippi	1	Poland	2
New York	32	Prussia	2
New Jersey	3	South America	4
North Carolina	1	Sweden	1
Ohio	6	Scotland	8
Oregon	2	Turkey	1
Pennsylvania	14	Total	144
Rhode Island	2		
South Carolina	1	RECAPITULATION.	
Tennessee	2		
Virginia	3	United States	166
Wisconsin	3	Foreign	144
Total	166	Total	310

TABLE No. 3.

Classification of Crime.

Crime.	Number.	Crime.	Number.
Arson, second degree	3	Forgery	6
Attempted burglary	2	Grand larceny	44
Assault with deadly weapon	6	Grand larceny and prior conviction	1
Assault to murder	12	Incest	1
Assault to rob	8	Mayhem	1
Assault to rape	5	Murder	4
Attempt to commit a crime against nature	4	Murder, first degree	17
		Murder, second degree	17
Burglary	20	Manslaughter	11
Burglary, first degree	39	Perjury	1
Burglary, second degree	36	Petit larceny and prior conviction	7
Burglary and prior conviction	1	Robbery	43
Burglary and grand larceny	3	Rape	1
Embezzlement	2	Robbery and grand larceny	1
Felony	13		
Felony and robbery	1	Total	310

TABLE No. 4.

Term of Imprisonment.

Term.	Number.	Term.	Number.
Half a year	1	Twelve years	7
One year	9	Thirteen years	2
One and one quarter years	1	Fourteen years	8
One and one half years	3	Fifteen years	22
Two years	35	Seventeen years	1
Two and one half years	9	Twenty years	1
Three years	27	Twenty-one years	2
Three and one half years	1	Twenty-two years	1
Four years	19	Twenty-five years	4
Four and one half years	3	Twenty-seven and one half years	1
Five years	49	Twenty-eight years	1
Five and one quarter years	1	Thirty-four years	1
Six years	16	Forty years	1
Seven years	10	Fifty years	1
Seven and one half years	1	Life	22
Eight years	13		
Ten years	33	Total	310
Eleven years	4		

TABLE No. 5.

Ages of Prisoners.

Age.	Number.
From fourteen to twenty years	29
From twenty to thirty years	129
From thirty to forty years	84
From forty to fifty years	32
From fifty to sixty years	25
From sixty to seventy years	9
From seventy to eighty years	2
Total	310

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TABLE No. 6.

Number of Prisoners from each County.

County.	Number.	County.	Number.
Amador	3	Sacramento	44
Alameda	12	Shasta	2
Butte	8	San Joaquin	24
Colusa	9	Sierra	3
Calaveras	2	Sutter	3
Contra Costa	3	Stanislaus	11
El Dorado	3	Siskiyou	2
Fresno	6	Santa Clara	5
Kern	9	Santa Barbara	6
Lassen	1	San Luis Obispo	1
Los Angeles	5	Santa Cruz	2
Marin	2	Solano	1
Monterey	2	San Diego	1
Mendocino	3	Sonoma	8
Mono	1	Tehama	9
Modoc	1	Tulare	3
Mariposa	1	Tuolumne	2
Merced	1	Trinity	2
Nevada	16	Yuba	10
Napa	4	Yolo	7
Placer	2		
Plumas	4	Total	310
San Francisco	66		

TABLE No. 7.

Educational Abilities of Prisoners.

Read and write	249
Read, and cannot write	7
Neither read nor write	54
Total	310

TABLE No. 8.

Number of Terms.

Prisoners serving their first term	213
Prisoners serving their second term	58
Prisoners serving their third term	22
Prisoners serving their fourth term	11
Prisoners serving their fifth term	5
Prisoners serving their sixth term	1
Total	310

TABLE No. 9.

Occupation of Prisoners, when Received.

Occupation.	Number.	Occupation.	Number.
Baker	5	Miner	14
Butcher	3	Marble cutter	1
Boilermaker	1	Molder	1
Blacksmith	8	Painter	7
Barber	2	Peddler	1
Bookkeeper	2	Printer	3
Brickmaker	1	Plasterer	1
Clerk	6	Plumber	2
Cooper	1	Sawyer	1
Cook	23	Shoemaker	9
Carpenter	6	Sailor	9
Cabinetmaker	1	Stonecutter	1
Dyer	1	Sash and blind maker	1
Engineer	6	Saddler	3
Fireman	3	Steward	1
Farmer	9	Saloon keeper	1
Gardener	2	Tailor	4
Gasfitter	1	Tinner	1
Hostler	5	Teamster	6
Harnessmaker	1	Upholsterer	1
Laborer	136	Vaquero	3
Lithographer	1	Washman	13
Lawyer	1		
Locksmith	1	Total	310

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REPORT OF THE CLERK

OF THE

State Prison at Folsom, California.

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REPORT OF THE CLERK.

CLERK'S OFFICE, STATE PRISON AT FOLSOM, CAL.,
June 30, 1882.

To General John McComb, Warden:

DEAR SIR: I have the honor to herewith submit to you my report for the fiscal year ending June 30, 1882, showing the receipts and disbursements, also maintaining cost of prisoners for same period, and statement of cash account to same date.

Very respectfully yours,

J. M. MINER, Clerk.

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TABLE No. 1.

Abstract of Total Cash Receipts from all sources for the Fiscal Year ending June 30, 1882.

Months.	State Treasury.	Commissary Sales of Merchandise.	Shoes.	Clothing.	Laundry.	Medicines.	Sundry Sources.	Salary Pay Roll Advances.	Totals.
1881.									
July	$6,700 00	$327 95	$4 65	$8 75	$16 20		$22 00		$7,079 55
August	7,509 70	192 94	1 25	6 50	20 82		4 96	$6 90	7,743 07
September	6,036 63	211 29	2 50	50	16 31	$75 15		17 50	6,359 88
October	6,496 99	513 23	5 25	25	15 35	4 00		73 00	7,108 07
November	7,522 54	389 19	1 75	4 50	15 45			80 85	8,014 28
December	7,851 46	150 05	4 50	50	10 25			34 60	8,051 36
1882.								60 00	
January	7,537 53	190 79	2 50		14 55				7,805 37
February	7,331 74	143 85	3 50		8 80			140 50	7,628 39
March	6,534 35	130 79	4 00		9 65			114 85	6,793 64
April	8,554 29	127 96	1 50		12 27			43 25	8,739 27
May	6,435 06	83 00	2 50		15 95		49 60	105 00	6,691 11
June	6,974 27	84 21	2 50		13 05			140 00	7,214 03
Totals	$85,484 56	$2,545 25	$36 40	$21 00	$168 65	$79 15	$76 56	$816 45	$89,228 02

TABLE No. 2.

Abstract of Total Cash Disbursements for the Fiscal Year ending June 30, 1882.

Months.	Commissary Bills of Merchandise.	Salaries.	Expense.	Discharged Prisoners.	Commutation of Subsistence.	Freight.	Discount on State Warrants.	Prison Improvements.	Artesian Well.	Temporary Salary Advances.	Telegraphing.
July, 1881	$3,459 14	$2,064 18	$130 85	$84 50	$20 00	$165 14	$268 00	$169 00	$66 00		
August, 1881	4,341 76	2,167 11	6 00	56 50	20 00	254 52	250 00	266 00	75 00	$2 00	
September, 1881	3,404 29	2,227 69	14 00	173 00	16 00	146 13	181 09	78 00	78 00	70 00	$21 16
October, 1881	3,849 06	2,239 24	36 25	113 50		121 96	194 88	97 50	27 00	290 00	
November, 1881	4,364 35	2,034 14	14 50	101 25	17 40	204 17	150 44	75 75		34 60	1 50
December, 1881	5,258 43	2,382 20	14 00	84 00	20 00	130 22	78 50	80 00		60 00	11 40
January, 1882	4,512 21	2,173 05	124 00	70 50	20 00	309 59		100 00		140 50	
February, 1882	3,867 91	2,258 14	19 50	171 65	20 00	395 48		368 50	280 00	114 85	14 56
March, 1882	3,408 37	2,335 98	21 30	74 35	20 00	421 02		90 00		40 00	6 73
April, 1882	5,474 97	2,410 57	127 30	157 32	20 00	271 56		90 00		105 00	9 43
May, 1882	3,470 02	2,246 13		41 75	20 00	222 86	2 65	197 50		110 00	10 21
June, 1882	4,310 60	2,184 83	52 05	73 12	20 00	188 27				30 00	10 80
Totals	$49,721 11	$26,723 26	$559 75	$1,201 44	$213 40	$2,830 92	$1,125 56	$1,612 25	$526 00	$996 95	$85 79

Table No. 2—Continued.

Months.	Postage.	Telephone Line.	Main Sewer.	Farm and Fence.	Wagons and Harness.	Transportation of Prisoners from San Quentin.	Live Stock.	Quarry.	Pump House.	Building Fund.	Miscellaneous.	Totals.
July, 1881										$306 81	$7 90	$6,741 52
August, 1881							$300 00				65	7,739 54
September, 1881											3 00	6,412 36
October, 1881							200 00					7,169 39
November, 1881	$12 00	$40 00					220 00				3 00	7,273 10
December, 1881	34 00		$132 75									8,285 50
January, 1882	9 00	87 15	73 50	$119 00					$73 50			7,812 00
February, 1882	10 00		144 00	48 10	$52 25							7,764 94
March, 1882	9 00		275 50	20 25	7 25	$66 80					13 24	6,809 79
April, 1882	18 00		136 00			300 90					33 93	9,154 98
May, 1882	12 00					4 50					25 45	6,363 07
June, 1882								225 00				7,094 67
Totals	$104 00	$127 15	$761 75	$187 35	$59 50	$372 20	$720 00	$225 00	$73 50	$306 81	$87 17	$88,620 86

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TABLE No. 3.

Exhibit of the Cost of Maintaining Prisoners at the State Prison at Folsom, for the Fiscal Year ending June 30, 1882.

Months.	Subsistence.	Forage.	Clothing.	Shoes.	Bed and Bedding.	Medicines.	Stationery.	General Use.	Salaries.	Expense.
July, 1881	$1,456 16	$235 13	$161 10	$81 29	$18 40	$175 46	$10 43	$244 27	$2,157 48	$165 10
August, 1881	1,388 17	7 39	151 93	70 13	61 12	----------	3 14	250 24	2,241 15	41 00
September, 1881	1,373 43	95 33	260 80	151 53	----------	49 96	2 44	324 03	2,204 98	24 47
October, 1881	1,356 10	221 75	270 81	89 75	31 05	126 82	30 40	294 54	2,256 72	37 25
November, 1881	1,528 57	360 87	177 85	134 01	181 00	55 59	35 92	295 44	2,270 00	70 50
December, 1881	1,632 19	58 97	267 18	90 96	77 78	68 22	36 84	596 42	2,280 25	15 00
January, 1882	1,612 84	----------	171 52	91 35	4 75	95 16	7 05	371 32	2,257 25	139 00
February, 1882	1,320 54	61 71	197 47	104 80	7 83	15 25	7 64	150 27	2,299 09	7 50
March, 1882	1,677 45	274 09	326 60	52 81	285 00	74 47	4 58	125 22	2,293 37	24 80
April, 1882	1,687 70	5 66	357 75	132 74	3 41	127 61	6 15	615 17	2,344 92	150 80
May, 1882	1,709 41	15 10	181 92	92 90	----------	97 79	6 91	277 64	2,191 22	6 50
June, 1882	1,731 09	188 46	197 53	132 70	21 53	119 49	17 84	486 36	2,279 88	221 05
Totals	$18,473 65	$1,524 46	$2,722 46	$1,224 97	$691 87	$1,005 82	$169 34	$4,030 92	$27,076 31	$902 97

TABLE No. 3—Continued.

Months.	Fuel.	Postage.	Light.	Freight.	Telegraphing.	Commutation of Subsistence.	Miscellaneous.	Total Cost per Month.	Average Number of Prisoners.	Average Cost per Capita per Day.
July, 1881	$275 00	$1 33	$227 63	$221 19	----------	$20 00	----------	$5,449 97	301	$0 58.40
August, 1881	227 50	1 57	19 69	117 14	$21 16	10 00	----------	4,611 33	300	0 49.58
September, 1881	230 40	9 63	215 94	82 78	----------	6 00	$181 50	5,031 72	295	0 56.85
October, 1881	268 65	24 99	259 01	171 39	1 50	17 40	----------	5,458 13	287	0 61.34
November, 1881	242 50	8 56	172 41	49 56	11 40	20 00	----------	5,614 18	283	0 66.12
December, 1881	295 45	32 41	348 15	331 42	----------	20 00	24 85	6,151 24	278	0 71.37
January, 1882	319 50	7 50	515 99	329 70	14 56	20 00	----------	5,957 49	274	0 70.13
February, 1882	143 84	8 78	54 73	193 08	6 73	20 00	----------	4,599 26	270	0 60.35
March, 1882	211 12	6 63	251 10	447 13	9 43	20 00	----------	6,083 80	300	0 65.41
April, 1882	239 52	16 92	47 10	208 16	10 21	20 00	----------	5,973 82	310	0 64.23
May, 1882	----------	14 08	164 28	171 27	10 80	20 00	----------	4,959 82	305	0 52.45
June, 1882	116 00	----------	176 98	238 76	11 09	20 00	----------	5,958 76	311	0 63.86
Totals	$2,569 48	$132 40	$2,453 01	$2,561 58	$96 88	$213 40	$206 35	$66,055 87	293	$0 61.60

TABLE No. 4.

Cash Statement, July 1, 1882.

July 1, 1881—To balance on hand	$3,107 62
To total cash receipts for fiscal year, as per Table No. 1	89,228 02
	$92,335 64
Total disbursements for fiscal year, as per Table No. 2	88,620 86
July 1, 1882—Balance on hand	$3,714 78

I hereby certify that the foregoing is a correct statement of all moneys received by me from the State, and the manner in which the same have been expended.

JOHN McCOMB, Warden.

Sworn to and subscribed before me, a Notary Public in and for the County of Sacramento, this 15th day of November, A. D. 1882.

[SEAL.] JAMES H. BURNHAM, Notary Public.

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REPORT OF THE PHYSICIAN

OF THE

State Prison at Folsom, California,

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REPORT OF THE PHYSICIAN.

To Hon. John McComb, Warden Folsom Prison:

DEAR SIR: In submitting for your consideration my second annual report of the medical department of the Folsom State Prison, it gives me pleasure to state, that no unusual amount of sickness has prevailed during the last year, although more than one third of all the prisoners are employed in the quarries, where they are constantly liable to contusions, bruises, and other accidents of more or less serious character.

It is true that the records and daily reports show a large number of calls at the office for medical treatment; but when we take into consideration the nature of their employment; the long and weary years they have served in prison life, with the necessary deprivations to which they are inevitably subjected; and last, but not least, when we take into consideration the fact, that a very considerable number of the prisoners is composed of those who were either disabled, or far advanced in the last stages of some chronic disease when they came here, the wonder is not that there are so many calls for medical treatment, but rather that there are so few.

It is, therefore, a matter of congratulation, that through the kind, humane, and watchful care of the officers of the prison, the warm and genial climate of the place, and the cleanly and comfortable quarters provided for the prisoners, we are permitted to enjoy so great a degree of health, comfort, and prosperity.

Since my last report, the large sewer connected with the prison has been completed, rendering the drainage perfect; and many other valuable improvements have been made which have a tendency to improve the convenience and beauty as well as the sanitary condition of the institution.

It is true, that the number of deaths during the year, in proportion to the number of prisoners, may seem large; but it is gratifying to me to state, that from the whole number of deaths (seven), only one could have been chargeable to, or in any way connected with, the climate, soil, or locality.

Of the other six, two died from casualties beyond our control, and four from diseases contracted long before coming to this place.

By referring to Table No. 2, it will be seen that by counting the whole number of deaths (seven) which have occurred during the year, the percentage would be $2\frac{4}{10}$ per cent., but as only five (5) died from natural causes, the actual percentage is $1\frac{71}{100}$ per cent., which I have reason to believe will compare favorably with any similar institution in any part of the United States or elsewhere.

Table No. 1 contains a list of all the diseases which have occurred during the year ending July 1, 1882.

Table No. 2 contains a list of all the deaths which have occurred during the year, with causes, etc.

Under the head of "Unclassified Diseases," in Table No. 1, I beg leave to repeat the words of my former report, viz., that "it is intended to represent the numerous ills to which prisoners are liable, and which require no particular treatment further than temporary relief. They are not usually excused from duty, and though the same person may make frequent calls at the office, yet they cannot safely be either refused or dispensed with, as it is the most expeditious mode of supplying their temporary wants."

I cannot, therefore, consistently with my duty, so far forget myself as to falsify my report by adding to or taking from it any case which of right belongs upon it; and as I believe in the old adage, "that an ounce of prevention is better than a pound of cure," so I believe that each and every accident, casualty, or other case of sickness, should be promptly cared for, and so recorded.

In conclusion, I desire to express my most hearty thanks to the Board of State Prison Directors, to the Warden, and other officers of the prison, for their hearty coöperation in all measures necessary for the improvement of the Medical Department of the institution, and for their uniform courtesy and kindness to me during the year.

All of which is most respectfully submitted.

W. A. GROVER, M. D,
Surgeon and Physician of the State Prison at Folsom, California.

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TABLE No. 1.

Diseases.	Number.	Diseases.	Number.
Abscess	4	Hemorrhage from lungs	4
Abscess in superior maxillary bone	1	Inflammation of bladder	2
Abdominal dropsy	1	Inflammation of ear	4
Ascarides	1	Inflammation of eye	19
Asthma	6	Indolent ulcers	8
Bilious fever	1	Insomnia	20
Bilious colic	27	Irritability of heart	4
Bilious	56	Insanity	2
Bronchial consumption	1	Lumbago	15
Bronchitis (acute)	4	Lepra (disease of skin)	1
Bronchitis (chronic)	2	Meningitis	5
Burns	4	Neuralgia	18
Catarrh	9	Orchitis (chronic)	4
Casualty (by gunshot)	1	Paralysis (partial)	1
Coughs	61	Pharyngitis	10
Contusions, bruises, and sprains	90	Pleuritis	5
Constipation	30	Poison oak	23
Diarrhea	86	Rheumatism (chronic)	9
Diarrhea (chronic)	3	Rheumatism (acute)	19
Disease of brain	5	Syphilis (secondary)	10
Disease of heart	6	Seminal weakness	6
Disease of liver (chronic)	2	Sciatica	2
Disease of kidneys	3	Suicide (attempt at)	1
Disease of scalp (chronic)	1	Skin diseases	3
Debility (general)	27	Stricture	1
Emphysema	3	Tonsilitis	16
Epilepsy	3	Tapeworm (tenia)	3
Fever and ague	40	Wounds (punctured)	7
Fistula in ano	2	Wounds (lacerated)	2
Gunshot wound	1	Wounds (incised)	4
Gunshot wound (chronic)	3	Classified diseases	785
Gastralgia	38	* Unclassified diseases	1,645
Hemorrhoids	25		
Hernia	10	Total	2,430

* Under the head of unclassified diseases it is intended to include all of the numerous calls for temporary relief for either real or fancied ills, some of which do not require any other treatmeut except such as may be given at the time in the office.

TABLE No. 2.

Embracing the whole number of Deaths during the year ending July 1, 1882, with cause.

Name.	Date.	Cause of Death.
Edwin Smith	July 16, 1881	Chronic disease of liver, with abdominal dropsy.
George Walker*	August 4, 1881	Shot while attempting to escape.
Chin Chow	August 9, 1881	Chronic diarrhea.
Ham Ah Loy*	September 9, 1881	Stabbed by fellow prisoner.
J. Sullivan	December 3, 1881	Softening of brain.
Wm. S. Collins	April 18, 1882	Bilious fever.
C. Williams	June 9, 1882	Chronic bronchitis, with general debility.

Total number of deaths	7
Total number of deaths from natural causes	5
Average number of population	291¼
Percentage of deaths to population	1.71

Those marked with * not counted in the percentage.

REPORT

OF THE

SPECIAL COMMISSION OF INQUIRY

INTO THE

General Administration of the State Prisons of California,

APPOINTED BY THE GOVERNOR JULY 1, 1881.

SACRAMENTO:
STATE OFFICE : : : J. D. YOUNG, SUPT. STATE PRINTING.
1881.

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REPORT.

SACRAMENTO, August 25th, 1881.

To his Excellency GEO. C. PERKINS, *Governor of the State of California:*

Your Special Commission of Inquiry into the general management of the State Prisons of California, and the official conduct of the officers connected therewith, having discharged the duties imposed by your letter of appointment and instruction, beg leave to submit this, our final report:

LETTER OF APPOINTMENT AND INSTRUCTION.

Your letter notifying us of our appointment and conveying your instructions was received by us July 6th ult. As explanatory of the occasion for the inquiry which by your authority we have instituted, and as presenting in most convenient form your authorization and instructions, we beg leave to reproduce it here as introductory of the matters which follow:

STATE OF CALIFORNIA, EXECUTIVE DEPARTMENT,
SACRAMENTO, July 1, 1881.

To Messrs. W. H. Mills, Robert Watt, and F. A. Gibbs:

GENTLEMEN: By the adoption of the new Constitution the management of the State Prisons is vested in a Board of Directors appointed by the Governor, by and with the advice and consent of the Senate. The Legislature of 1880 passed an Act defining, regulating, and governing the State Prisons of California.

In accordance with its instructions, and in conformity with the constitutional requirements, I appointed five representative gentlemen from different localities of the State, each of whom possessed the confidence and respect of the community in which he lived. They accepted the trust, and in due time entered upon the discharge of their duties by selecting the Wardens and other officers and employés of the prisons, assumed the direction, and are held responsible for the administration of its affairs. Recently charges of a serious character have been made by the public press reflecting upon the Board of Prison Directors and the Warden in charge of the prison at San Quentin. The publicity of these charges demanded notice from the Board and Warden, and at a meeting of the Directors a resolution was unanimously passed requesting the Governor to appoint a Commission to examine into the general management of the prisons, and to thoroughly investigate the charges made by the San José Mercury and San Francisco Daily Examiner against the Warden of the prison at San Quentin, at whose urgent request the demand was made, and also to appoint a financial expert to examine the books and accounts of said prison. In accordance therewith I have appointed you, gentlemen, and have to thank you for your acceptance. I have also appointed Lauren E. Crane, an expert, to examine the books and accounts of the prison.

I respectfully ask your consideration to the following causes of investigation, in addition to those involved in the conduct of the Board and Warden:

First—Is the appointment of the subordinate officers and employés of the prison made by reason of fitness for their position, or does political or personal influence secure it without regard to qualifications?

Second—Consider the previous management of the prison under the old system, with a view of its comparison with the present. By this, I mean as to the cost of supporting the prisoners, their employment, sanitary condition, moral improvement, and the general discipline and economy that prevails in the several departments of the prison.

Third—About forty prisoners per month are discharged from the prisons to mingle again in

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the community. What is their influence upon society? Does the statistics of the prison show that its influence has been of a reformatory nature, and does it compare favorably with other penal institutions in sister States?

Fourth—Has the pardoning power been judiciously exercised? What percentage, if any, of those pardoned or commuted have again been convicted and returned to prison?

Fifth—Has the purchase of machinery and material by the Board of Directors, with a view of making the prison self-sustaining, been a wise and expedient measure? And has the appropriation for that purpose been honorably and judiciously expended? In the examination of this subject you will please bear in mind that after the first of January next all convict labor by contract ceases.

I further desire and particularly request of you, that you will not confine your investigation to these mentioned subjects alone, but that in your judgment and wisdom you will make a thorough and plenary examination of any and all matters relating to the management of the prison, the administration of the Directors, and the conduct of its officials; and further, that you will suggest such opinions as you may deem of advantage to the interest of the prison and the benefit of taxpayers.

With respect, I remain your obedient servant,

GEO. C. PERKINS, Governor.

Observing the order of subjects presented for our investigation, we beg leave to call your attention to

THE POLITICAL ASPECT OF THE EXISTING PRISON MANAGEMENT.

Your letter enjoins upon us an inquiry into the extent to which political partisanship has controlled the appointments to official positions in the prison administration. The fact that you imposed this duty upon us leads to the inference that, in your judgment, if the partisan reason is permitted to influence the appointment of prison officers in any degree, it will inevitably dominate such appointments altogether. Prior to the adoption of the existing Constitution, the entire administration of the State penal institutions was subject to party mutations. Its government was essentially partisan in character. Its control and direction was in the hands of the three leading officers of executive administration, while the second officer in the government of the State became, by virtue of his partisan preferment, the Warden of the prison, and practically the arbiter of its destiny for four years. The Governor, Lieutenant-Governor, and Secretary of State, composed the Directory, with the Lieutenant-Governor as resident Director, or ex-officio Warden. These officers, in our political system, are the choice of a political convention, and however distinguished for civil administrative ability, are not selected with reference to their experience in the management of penal institutions, or their familiarity with the science of penology. The success of any penal system depends almost wholly upon its proper administration. The best system ever devised will fail if unintelligently administered, while the worst may be measurably redeemed from total failure by earnest, thoughtful, and judicious administration.

The Governor, Lieutenant-Governor, and Secretary of State came into control of the prisons at a time when, under our political institutions, party feeling was highest, and when even the spirit of party faction was most intensified. The official patronage of such an institution is large. It is already a part of the political history of our State, that this patronage became at once a portion of the spoils esteemed to be the rightful reward of party success. Each administration, thus placed in control of this department of government, entered upon its direction with but four years' tenure of office. This

period was not sufficiently long to permit of the formation of plans of reform, much less the maintenance of such reform to that point of development where experience would avail to guide and correct its course. To take the existing system as they found it, and drift through an executive term of four years, was as much as could reasonably have been expected of a directory so formed and so environed. That its entire administration should have fallen into the category of political rewards is not at all a subject of surprise.

After enduring this political system for thirty years, the people of this State sought, by provisions in the organic law, to remove the penal institutions of the State from under the baneful influences of political mutations. Popular intelligence was not at fault in divining the real obstacle to the development of a higher penal system. That intelligence had penetrated the subject to the discovery of the central error of the old policy, and by provisions in the new Constitution, a plan of prison government was outlined, wherein the policy of removing the penal institutions of the State from subjection to party control is unmistakable.

Article X of the Constitution provides for the creation of a Board of five Directors, who shall have charge and superintendence of the State Prisons, and who shall hold office for ten years. The Governor is empowered to appoint these Directors; but to secure them against the caprice of a political Executive, the power to remove them is made dependent upon their conviction of misconduct, incompetency, or neglect of duty, after due trial upon written charges. To this Board of Directors is given the power to appoint a Warden and Clerk for each prison; but the power of removal of these appointees is restricted to good cause, enumerated as "misconduct, incompetency, or neglect of duty." The exercise of the power of removal of the Warden is, therefore, restricted to good cause. The fact of the existence of such good cause must, therefore, be first established.

To the Warden is committed the important and significant trust of appointing and removing at pleasure all other officers and employés of the prisons. We quote from Section 3, Article X, Constitution of this State, as follows:

> All other officers and employés of the prison shall be appointed by the Warden thereof, and be removed at his pleasure.

The implications of this latter provision are unmistakable. We have already called your Excellency's attention to the paramount influence and importance of administration as a factor in the success of any penal system. We beg leave to emphasize it here by repetition. That the importance of this controlling element in prison discipline was clearly understood by the framers of the Constitution is amply proved by the broad significance of this provision. The Warden was given this unrestricted power of appointment and removal, to be exercised arbitrarily, to the end that fitness, capacity, adaptability, and special qualifications should be the sole and only considerations influencing the selection of those upon whose administrative intelligence and exceptional fitness for the peculiar duties of their offices the success of any system, however wisely conceived, must depend. Our investigations have justified the high wisdom of this provision to our understanding. The system outlined in the new Constitution presents three leading safeguards against the subjection of the prison management to the vicious party spoils system.

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First—The long tenure of office on the Board of Directors.
Second—The restriction upon the executive power of removal.
Third—The absolute independence of the Warden in the appointment and removal of his subordinates, and his perfect protection against all encroachments upon his most important prerogative on the part of the Directors. This latter is the vital point of the whole plan. Indeed, it may be regarded as the only safeguard against an immediate relapse into the methods which the people of the State were so earnestly desirous of abandoning.

These considerations are presented, not because they will be new to your mind or debatable in your understanding, but for the purpose of recalling the standard of judgment by which the significance of the facts we now report must be determined.

We find that in pursuance of your constitutional prerogative, you appointed Hons. A. H. Chapman, J. H. Neff, Wallace Everson, George W. Schell, and W. T. McNutt, to constitute the Board of State Prison Directors. By your kind courtesy we have your personal testimony as to the reasons which influenced you in the selection of these gentlemen. We find from this testimony that your reasons for such appointments were based upon your belief that the gentlemen receiving this high trust at your hands possessed special fitness for its proper discharge.

This Board elected to be Warden of the State Prison at San Quentin, Joseph P. Ames; and to be Warden of the Prison at Folsom, Thomas C. Pockman; and to be Clerk of the Prison at San Quentin J. V. Ellis, and to the office of Clerk at Folsom, J. M. Minor. Your instructions made it our duty to inquire, and inquiry reveals the fact, whatever its implication may be, that all the Directors appointed by you, and the four constitutional officers elected by them as above noted, were at the time of their appointment and election, active members of the Republican party.

Among the charges referred to us for verification or disproof by your Excellency, was one involving the question: "Did the Wardens of the Prisons waive their constitutional rights with respect to the appointment and discharge of subordinate officers and employés in favor of the Board of Directors, and did said Board accept and act upon said waiver?"

Upon this question the testimony of Directors Chapman, Neff, and Everson, and of the Wardens was taken (Director Schell was not a member of the Board at the time of the alleged compact). The Directors testifying, and Warden Ames denied, that any such agreement was entered into. They declare, however, that prior to the election of Warden Ames, that gentleman came before them and voluntarily proposed to consult with and be guided in some measure by the advice of the Board in the selection of subordinates, except as to the office of Gate-keeper, at the front gate, in the selection of whom the Warden was to be left untrammeled. Warden Pockman testified that prior to his own election he was called before the Board, and informed that Warden Ames had appeared before that body, and had agreed to be guided by the advice of the Board in the selection of his subordinate officers. Warden Pockman then entered into a similar agreement. As interpreting the nature of the agreement thus concluded, Warden Pockman testified that he thought the Directors desired to place their friends in position under him, and that as he believed they would select good

men he could get along with them. So far as Warden Pockman is concerned, it is clear that a faithful observance of his agreement placed the selection of his subordinates in the hands of the Directors.

We cannot reconcile the denials of the Directors and Warden Ames with the admission made by them as to the exception relating to the Gate-keeper. If, in the agreement made by Warden Ames, he did not surrender any part of his constitutional duty, the exception becomes incomprehensible. If the exception was made—and it is admitted—then we must suppose the existence of a rule placing the choice of other officers in a category differing from the exception. But beyond the inferences of logic we find facts presenting the character of the agreement in a clear and unmistakable light.

Dr. Cary was informed by a letter from Jerome Spaulding, Secretary of the Board, of his "recommendation" to the position of Resident Physician at San Quentin. He testified that he himself notified Warden Ames of his appointment, and expressed the polite hope that the appointment would be agreeable to the Warden.

The following letter reveals a similar transaction, relating to the appointment of Dr. Grover:

OFFICE OF STATE BOARD OF PRISON DIRECTORS,
SAN FRANCISCO, July 9, 1880.

W. A. GROVER, M. D. Dear Sir: At a meeting of the Board of State Prison Directors, on the third inst., you were unanimously recommended to the Warden for the office of Surgeon and Physician of the State Prison at Folsom.

Very respectfully yours,
JEROME SPAULDING,
Secretary of Board of Prison Directors.

It is significant that this letter was not sent to Warden Pockman. There is not only no reason to believe that the Warden's preferences were consulted in the matter, but we have positive testimony that the Warden was present when the action was taken, and personally protested against the appointment. In his testimony Dr. Grover disclosed the fact that he knew of this protest; that he was aware of the fact that he had assumed the duties of the position against the choice and preference of the Warden. Further than this, he believed the Directors would sustain him in his position against any attempt on the part of the Warden to remove him. Dr. Cary and Rev. H. Cummings both supposed themselves to be holding positions independent of the Warden's pleasure, and these are by no means the only cases of similar import that could be cited.

Fred. B. Hollis, Captain of the First Night Watch, was appointed in the same manner, as the following letter shows:

OFFICE OF STATE BOARD OF PRISON DIRECTORS,
SAN FRANCISCO.

FRED. B. HOLLIS, Esq., San Quentin: At a meeting of the State Board of Prison Directors, held at this office on the third inst., you were recommended for the office of Captain of the First Watch at the State Prison at Folsom.

Yours respectfully,
JEROME SPAULDING, Secretary.

But still more direct evidence is to be found in the official records. The records of transactions of the meeting of February 26, 1880, contain the following:

FEBRUARY 26, 1880.

The Board met at the office of Secretary McNutt on this occasion. Extract from the minutes on page 11:

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"On motion, the Secretary was instructed to communicate with G. W. Gilkyson, and inform him that it was the desire of the Board that he should proceed to the prison at San Quentin at the earliest convenience, and make himself acquainted with the duties of the office of Clerk of the Commissary Department. The Board then adjourned."

Herein Mr. Gilkyson is directed by the Board to proceed to San Quentin. He goes by this authority. These transactions do not contain even a suggestion of advice or concurrence with the Warden.

As having a general bearing upon the question as to the political character of the administration of the prisons, it is here stated, that during the national political campaign an assessment of twenty per cent. of one month's salary was levied on the salaries of the officers and guards of the prison at San Quentin, and with but slight exception, it was paid by them. The money so collected was supposed by those paying it to be in favor of the Republican State Central Committee.

Another class of facts having a general bearing upon this question is presented. There are seventy-two officers and guards attached to the prison at San Quentin. Sixty-seven of these are pronounced Republicans. They succeeded sixty-seven Democrats. When the present Warden took office, all incumbents were Democrats. Within eight weeks fifty-eight Democratic guards were relieved by discharge or permitted resignation, and fifty-eight Republicans appointed to fill their places. Nearly all the guards, and most of the subordinate officers, hold their positions through the "influence" of leading Republican politicians.

In giving his testimony concerning the subject of assessment, J. V. Ellis, Clerk of the prison, stated, that as he understood it, the Republican party was in charge of the prisons. As indicating the political tone and atmosphere pervading the prison management, the following extracts from the letters of the Secretary of the Board will close this review of the testimony:

Extract from a letter directed to Mr. Neff, November 14, 1880, informing Mr. Neff, that by order of the President there would be an official meeting of the Directors, in San Francisco, November 8:

To the God that rules in the affairs of men let us give thanks for this glorious victory in the interest of human rights and human progress. I haven't heard a rebel yell for two days and nights. They don't curse loud, but deep.

Very truly yours,

JEROME SPAULDING,
Secretary of the Board.

Extract from a letter from Jerome Spaulding to the Hon. James Murdock, Warden of the Indiana State Prisons:

SAN FRANCISCO, July 16, 1881.

I notice that the number of prisoners remaining in the prison October 31, 1880, is but 577, which fact leads me to believe that there must be another prison in the State. If so, will you still further oblige me by informing me of its locality, that I may be enabled to communicate therewith. It occurs to me (perhaps erroneously) that as Indiana is so Democratically inclined, as a natural sequence, it should excel respecting the number of her convicts.

JEROME SPAULDING,
Secretary Board of State Prison Directors of California.

It was admitted by both Wardens that they had given assurances to the Board prior to their election that in case the Board should become dissatisfied with their administration they would resign. In short, the whole constitutional scheme and plan for removing the

political management which has fettered the penal system of this State has been subverted in practice, and the old system, without material change, has been perpetuated by both the procurement and concurrence of the Directors and Wardens.

We find, as a conclusion of fact, that each of the Wardens elected to the positions they now hold entered into covenants with the Board of Directors with respect to the appointment of officers and employés of the respective prisons under their management, inimical to that freedom from interference on the part of the Board of Directors, in support of which the Constitution had, in our judgment, designed to establish safeguards. We find that the covenants entered into by the Wardens constitute a practical abandonment of their constitutional rights in favor of the Board of Directors, and that such abandonment was accepted by said Board.

Among the officers comprising the corps at each of the prisons, are to be found many faithful, competent, and efficient men; but the deleterious effect of this interference with the plain constitutional prerogative of the Wardens, is marked and unmistakable. We however unhesitatingly affirm that, in both prisons, subordinate positions have been conferred upon men for political reasons, against the free choice and judgment of the Wardens, and that at the time of the examination made by us, subordinate positions were held by incumbents who would not be retained were the Wardens free from all personal and political restraints in the appointment and discharge of the officers and guards under them. This enforced relation has already been productive of much inharmony and insubordination, conditions wholly at variance with successful administration. Perfect subordination to the authority of the Warden is indispensable to discipline; and perfect obedience cannot be commanded of the subordinate who holds his position at the hands of the authority controlling his superior officer.

COMPARATIVE COST OF MAINTENANCE.

In the second place, you request that a comparison of the cost of maintenance be instituted between the present and former administrations of the prison; also, as between the cost of the prisons in this State and those of other States. We have discharged this duty, and present the result in the following exhibits:

The reports of the California prisons for 1877–8 do not contain monthly statements of maintenance for those years, but from the Warden's report, for the quarter ending September 30th, the cost is as follows:

July	$16,058 65
August	15,695 30
September	15,067 16
Total	$46,821 11

Average number of prisoners during the same period, 1,547; average cost per day per capita, 32.8 cents.

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From the same report we find the following comparative table:

Maintenance cost per day per capita	32.8
For two years ending June 30, 1879	36.4
For two years ending June 30, 1877	42.7
For two years ending June 30, 1875	44.
For two years ending June 30, 1873	53.½

Exhibit of cost of maintaining prison at San Quentin from July 1, 1880, to July 1, 1881:

1880.	Maintaining Cost.	Av. No. Prisoners per Day.	Per Capita.
July	$14,675 75	1,520	31.2
August	13,754 06	1,506	30.
September	13,033 36	1,410	31.
October	12,515 34	1,319	30.6
November	12,927 25	1,306	32.9
December	13,098 47	1,262	33.4
1881.			
January	12,876 50	1,253	33.1
February	12,272 73	1,253	34.7
March	13,176 25	1,235	34.4
April	12,649 68	1,239	34.
May	12,435 20	1,237	32.4
June	12,340 09	1,222	33.6
Totals	$155,764 68	15,762	32.5

Comparative statement of cost of maintaining prisoners at undermentioned prisons:

San Quentin—Year ending July 1, 1881: Total earnings, $50,010 29; total maintaining cost, $155,764 68; average number of prisoners per day, 1,313.5; per capita cost of maintenance per diem, 32.5 cents.

Iowa—Year ending September 30, 1879: Limited by law to an expenditure of $7 per month for each prisoner. Warden reports actual outlay to be a fraction less than that amount—say per day, 23.33 cents.

Wisconsin—Year ending September 30, 1879: Average cost per prisoner per week (includes general repairs, Directors' and traveling expenses, etc.), $2 36—say per day, 32.3 cents.

Pennsylvania (Western District)—Year 1879: Maintaining cost, $78,175 08; daily average number of prisoners, 784: daily per capita, say 27.3 cents.

Illinois—Two years, ending September 30, 1878: Daily cost of maintenance per capita, 1877, 39½ cents; daily cost of maintenance per capita, 1878, 33¼ cents.

Michigan—Year ending September 30, 1880: Net expenses, $84,517 66; daily average number of convicts, 813; daily per capita, say 28.4 cents.

Indiana—Year ending November 1, 1880: Average cost for each prisoner per diem, 36½ cents.

New York—Year ending September 30, 1879: Clinton, daily average number of prisoners, 573; daily average cost, 51 cents. Auburn, daily average number of prisoners, 1,146; daily average cost, 30.2 cents. Sing Sing, daily average number of prisoners, 1,660; daily average cost, 30.9 cents.

Kansas—Years ending June 30, 1879-1880: Daily average cost per capita, 1879, 42.3 cents; daily average cost per capita, 1880, 41.88 cents..

We also present an exhibit of earnings at San Quentin for one year, as follows:

1880.		1881.	
July	$4,159 07	January	$4,146 80
August	3,489 45	February	2,918 05
September	3,825 39	March	3,499 35
October	4,848 06	April	3,834 35
November	4,698 60	May	4,466 51
December	4,989 65	June	5,224 01
Total			$50,010 29

This data possesses but slight value as determining the efficiency of prison administration. In the case of California, the mileage of the Directors must be added to the cost of maintenance to present the full facts. Since the present administration was inaugurated the prison at Folsom was put in operation. For the first six months of the present year the Folsom Prison cost $31,193 34, or at the rate of $62,386 68 per annum. San Quentin has been relieved of some three hundred convicts. The aggregate cost of its maintenance would, therefore, be less than that of former administrations. The question of the per capita per day, is largely influenced by the method of keeping accounts at different prisons. Some managers charge all repairs against supplies. Others, to produce an appearance of economic administration, charge all repairs to construction account, or to the account of "improvements." This factor at San Quentin is now so charged. The account for support is easily manipulated by diverse methods of bookkeeping. In California, for some time to come, the gross aggregate cost to the taxpayers will be greater than for some time past. The prison at Folsom will remain unproductive for some time. The State must also enter upon the era of manufacturing on its own account, and the equipment in the way of tools, machinery, and buildings will require large expenditures of money. Comparisons, to be determinate of facts, must be made between things similarly circumstanced. The dissimilarity of condition and the introduction of irregular and disturbing factors, as between administrations of the same prison, or between penal institutions of different States, destroys the parallels of comparison, so that the exhibits prove little or nothing, and hence are of small value as guides to correct conclusions.

CHARACTER OF THE STATE PRISONS OF CALIFORNIA AND THEIR INFLUENCE IN SUPPRESSING CRIME.

The third article in your letter of instruction reads as follows:

Third—About forty prisoners per month are discharged from the prisons to mingle again in the community. What is their influence upon society? Do the statistics of the prison show that its influence has been of a reformatory nature, and does it compare favorably with other penal institutions in sister States?

The State Prison at San Quentin was established by accident, rather than design. In its primary history it was located by parties having

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leases from the State to maintain its inmates. By the terms of these leases the contractors agreed to keep the convicts in confinement and support them for a stipulated sum, to be paid monthly. The contractors were entitled to the labor of the prisoners. Finding this labor might be profitably employed in the manufacture of brick, and finding an abundance of clay for this purpose at Point San Quentin, that locality was finally fixed upon as the location of the prison. The present walls at San Quentin and the old stone-cell building were built by a lessee during the existence of one of these leases. The inclosure was made as a measure of economy in guarding the prisoners from escape. The penal system established was not determined by legislation. The system, such as it was, grew out of the necessities of the lessee. The Courts sentenced the offenders to a term of hard labor in the State Prison, and the Sheriff, armed with a commitment, delivered his prisoner to the lessee at San Quentin. When once the gate had closed upon the convict the law gave itself no further concern in the case. The lessee—who by legislative enactment became the Warden or Governor of the prison—exercised full control over the conduct of the prisoner for the term of his sentence. His food and clothing, his punishments and rewards, were all under the unrestricted control of the lessee. During the continuance of this lease system the prisoners were worked by day in the brickyards, and confined, or rather "corraled," within the walls by night. A military guard, occupying positions commanding the brickyards, with cannon enforced submission to restraint. The principal object sought was to make the contract profitable. The convicts were hired, persuaded, or forced to work, as each case demanded. The convicts were congregated in large cells for safe keeping by night, and worked in gangs, under overseers, by day. Their social intercourse was entirely free from all restriction. No badge or insignia of any kind distinguished the dress of the convicts. When not engaged in labor the convict was master of his own actions. He amused himself by engaging with his fellow-prisoners in games of sport or chance.

This was the mold in which the system obtaining to-day was cast. Nearly all these rudimentary features are still plainly traceable. The old guard line and cannon remain without change of position, while the penal system, although having undergone some modifications, still remains, congregate and social. As a means of punishment for crime, imprisonment at San Quentin presents but a single element, to wit, restraint of personal liberty. The walls inclose a social convict world, with rivalries, jealousies, feuds, and friendships, all its own. But this world is not in any sense remote from the world without. The guard line or the wall may bound the limit of the free action of the prisoner, but the world comes to him in the visits of friends, the gossip of the latest comer, in correspondence, in the daily prints, in the direct or indirect social relation with the officers and guards, or from the social atmosphere of the family where he, or some of his fellows serve as a domestic. There is no broken or suspended bond of sympathy between the California convict and the great body politic outside the prison. Through all his senses the convict lives in the free world without, and finds wholesome food, good clothing, comfortable shelter, light labor, humane treatment, and congenial companionship within. There is no banishment, no isolation, and save the restriction upon the liberty of free locomotion, no imprisonment. Communication with the world unbroken, the convict has

not lost his interest in or influence upon society at large. A convict at San Quentin drafted the Goodwin bill and directed the policy of the State in its passage. A convict at Folsom, over the signature of his Warden, answered an editorial in a public journal on editorial criticism upon prison management. These incidents are cited, not because they are deemed enormities in themselves, but because they are selected from many in kind as exponents of the system. When the novice in crime or a youthful offender enters upon a term of imprisonment in either of the State Prisons, he is introduced to an intimate association with the entire convict and ex-convict world. Forever thereafter these convicts will claim fellowship with him. For the full term of his sentence he will have unrestrained social relation with convicted criminals. For the full term of his incarceration he will live in a moral and intellectual atmosphere created by the blended feeling, thought, aspiration, and desire of his fellow convicts. This dominant atmosphere will mold his mind, develop his motives, and fashion his future character. You remind us that in each month forty of these convicts are delivered from imprisonment after the completion of longer or shorter terms of penal servitude.

We find nothing in the existing system affording the slightest encouragement to hope for the better after life of these men. Looking back into the life from which they have emerged, we cannot point to the formative forces which would afford even a reasonable probability that these men are restored to society improved. To all who have had observation of the system testifying before us, we appealed for information as to the existing influences calculated to subdue or modify the criminal propensities of offenders against the law. Aside from the restraining influence the fear of punishment may exercise, no claim to the existence of any reformatory tendencies was set up. From the very beginning of his term of sentence the convict's life is merged and blended with the general social and industrial life of the prison. He is assigned a cell with a fellow convict or placed in a room with a score or more prisoners. If he has acquired any special skill as an artisan or mechanic, that fact determines from the first his employment. His immediate advancement to the position of a trusty will depend upon his capacity to be useful to the prison administration. If, before his sentence, he was a bookkeeper, a clerical position in some of the departments will be assigned him. If he possesses no skill he will be assigned to duty in the brickyard or construction force. If practicable, he will be employed in some of the workshops under a contractor, and thus he will be fully launched upon his prison career.

The penal system of this State has existed without material change for thirty years. Each administration has sought, by the adoption of economic devices, to make a record in the direction of improvement. In its essential characteristics the system has remained unchanged. A congregation of 1,200 convicts, mingling in unrestricted social intercourse, cannot fail to energize all the criminal attributes of the mind. Living in this common atmosphere of disgrace, all sensitiveness to the degradation of crime is soon blunted and destroyed. This open, common knowledge of each other's crimes and identity, is the greatest obstacle to the reformation of the criminals confined in our prisons. In fact the realized strength of associated numbers confirms the convict's opinion in his equal respectability with other men. In

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his opinion he does not stand in need of any reform. He resents all efforts at his reformation as the rankest phariseeism.

But this open knowledge of the convict and ex-convict class pursues him into all his after life. He will be the prey of his prison associates should he attempt to rise above them. The deeply interesting and instructing testimony of Captain I. W. Lees, concerning the effect of this introduction to the criminal class upon the future life of the ex-convict, constitutes the strongest indictment against the existing system ever presented. Under the conditions surrounding the ex-convict in this State, the line of the least resistance is to attach himself permanently to the criminal classes, and abandon the struggle toward a better life as hopeless. We directed our inquiry to the ascertainment of facts bearing upon the question of the subsequent lives, history, and character of the prisoners discharged from San Quentin, and beg leave to present briefly a resume of the evidence elicited.

Honorable Robert Ferrall, who for many years has been the presiding Judge of a Criminal Court in the City of San Francisco, testified that many ex-convicts from the prisons of this State had been tried for second, third, and fourth offenses in his Court. That in all such cases the character of the crime and the circumstance attending its commission, as developed on the trial, invariably exhibited an abandoned criminal tendency, and a ripe scholarship in crime, on the part of the prisoner at the bar.

Judge Freelon, of the Twelfth Department Superior Court of San Francisco, testified that he had presided over the trials of convicts charged with the murders of fellow-convicts, committed in the prison; that in the proceedings before him a "very large number of convict witnesses" was examined. It was necessary to the proper development of the evidence in the cases tried to bring into view the true inwardness of convict life in the prison. The view thus afforded had revealed to his understanding, in the clearest light, the intensifying criminal tendencies of the penal system of the State. In a long administration of criminal law he had plainly noted the mature criminal characteristics of the ex-convicts from the penitentiaries of the State. From the observations thus afforded the witness had felt himself amply justified in denouncing from the bench the penal system of the State, as a course of instruction in crime, and the State Prisons as "colleges of crime."

Judge Darwin, for many years acting District Attorney in the Criminal Courts of San Francisco, confirmed, by his testimony, the existence of strong criminal tendencies in the prison system of the State.

Captain I. W. Lees, for twenty-eight years a detective officer in this State, stated in his evidence given before us, that discharged convicts and confirmed criminals from other States and from Europe, having informed themselves of the character of our prisons, deliberately choose this State as the theater of criminal operations. This officer also gave it as his opinion, and abundantly fortified by unmistaken instances, that the light, punitive character of the prison discipline does not exert a deterring influence upon the distinctively criminal classes in this State. The testimony given before us, combined with the examination made by us of a large number of the convicts themselves, forced upon us the conviction that to the influence of the prisoners themselves is attributable the fact that the proportion of convicts to the whole population is abnormally large.

For example, the State of Michigan, with a population fifty per cent. greater than that of California, has less than one half the number of convicts in her prisons to be found in ours. Even the State of New York, with over five times our population, has less than double our number of convicts.

Another evidence of the demoralizing tendency of the system is to be found in the statistics of recommittals. During the administration of Warden Ames, which was inaugurated in February, 1880, and which, at the time of our examination, had been in existence but seventeen months, forty-five of the convicts discharged during that period have been recommitted—an average of nearly three for each month. Since then there are forty discharges in each month, this would indicate a percentage of recommittals equaling eight per cent. This expression of fact by mere figures does not convey adequately the true implications. The short intervals of time between these recommitments is so highly suggestive as to justify the full presentation of the record here.

Statement showing the record of prisoners discharged from the California State prison during the administration of J. P. Ames, Warden, and returned again upon a new charge; also the county sent from, and their charge:

Case No. 1—Received June 4, 1878; grand larceny; 2 years; Los Angeles; discharged February 4, 1880. Received April 1, 1880; grand larceny; 4 years; Merced.

Case No. 2—Received June 1, 1878; burglary, first degree; 2 years; Sacramento; discharged February 1, 1880. Received May 5, 1880; burglary, second degree; 5 years; Marin.

Case No. 3—Received July 26, 1878; burglary, second degree; 2 years; San Diego; discharged March 26, 1880. Received May 16, 1880; burglary, second degree; 1 year; Los Angeles; discharged March 16, 1881.

Case No. 4—Received May 24, 1859; grand larceny; 2 years; Amador; discharged May 24, 1861. Received April 27, 1867; burglary and grand larceny; 7 years; El Dorado; pardoned, discharged August 6, 1872. Received May 5, 1874; housebreaking; 9 years; El Dorado; discharged April 5, 1880. Received June 11, 1880; burglary and prior convictions; 10 years; El Dorado.

Case No. 5—Received June 2, 1877; grand larceny; 3½ years; San Francisco; discharged February 2, 1880. Received June 12, 1880; burglary, second degree; 1 year; San Francisco; discharged April 12, 1881.

Case No. 6—Received April 18, 1877; burglary, first degree, and felony; 4 years; Alameda; discharged April 17, 1880. Received June 20, 1880; forgery; 4 years; Colusa.

Case No. 7—Received May 9, 1862; grand larceny; 2 years; Butte; discharged May 2, 1864. Received January 14, 1869; grand larceny; 5 years; Solano; discharged April 1, 1873. Received September 3, 1875; grand larceny; 6½ years; San Francisco; discharged February 18, 1880. Received July 10, 1880; burglary, first degree; 4 years; Alameda.

Case No. 8—Received December 12, 1874; housebreaking; 1 year; Sacramento; discharged October 22, 1875. Received August 7, 1876; burglary; 6 years; San Francisco; discharged June 22, 1880. Received July 31, 1880; burglary, second degree (two commitments); 8 years; San Francisco.

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Case No. 9—Received September 20, 1879; burglary, second degree; 1 year; Monterey; discharged July 20, 1880. Received August 17, 1880; burglary; 2 years; Stanislaus.

Case No. 10—Received May 26, 1878; burglary, second degree; 2 years; Los Angeles; discharged January 26, 1880. Received September 5, 1880; grand larceny; 1 year; Los Angeles.

Case No. 11—Received October 27, 1868; burglary; 3 years; Sacramento; discharged May 16, 1871. Received August 1, 1872; housebreaking; 2 years; Butte; discharged April 17, 1874. Received May 24, 1875; housebreaking; 1 year; Solano; discharged February 10, 1877. Received June 20, 1876; housebreaking; 5 years; San Joaquin; discharged January 20, 1880. Received September 6, 1880; burglary, first degree; 8 years; Alameda.

Case No. 12—Received November 11, 1876; grand larceny; 1 year; Yolo; discharged September 21, 1877. Received June 20, 1878; burglary, first degree; 2 years; Ventura; discharged March 6, 1880. Received October 12, 1880; burglary, first and second degree; 3 years; Contra Costa.

Case No. 13—Received April 19, 1876; burglary; 2½ years; San Joaquin; discharged April 19, 1878. Received November 16, 1878; burglary, first degree; 3 years; Sacramento; discharged July 31, 1880. Received October 19, 1880; assault to rob and prior petit larceny; 6 years: San Francisco.

Case No. 14—Received September 2, 1876; grand larceny; 5 years; Santa Clara; discharged April 2, 1880. Received October 23, 1880; assault to rob and assault to murder; 28 years; Santa Clara.

Case No. 15—Received September 18, 1866; burglary; 3 years; San Francisco; discharged April 6, 1869. Received July 29, 1876; attempted burglary; 5 years; San Francisco; discharged February 29, 1880. Received November 15, 1880; attempted burglary, first degree; 7½ years; San Francisco.

Case No. 16—Received August 15, 1879; burglary; 1 year; Contra Costa; discharged June 15, 1880. Received November 21, 1880; burglary, second degree; 4 years; San Joaquin.

Case No. 17—Received July 26, 1870; grand larceny; 2 years; Yuba; discharged April 6, 1872. Received January 10, 1874; petit larceny, second offense; 2 years; San Mateo; discharged September 29, 1875. Received January 13, 1878; grand larceny; 3 years; Yuba; discharged May 13, 1880. Received November 21, 1880; grand larceny; 10 years; San Joaquin.

Case No. 18—Received July 31, 1878; forgery; 2 years; Sacramento; discharged March 31, 1880. Received November 22, 1880; forgery; 6 years; San Francisco.

Case No. 19—Received January 11, 1876; robbery; 1 year; Kern; discharged November 21, 1876. Received June 3, 1878; burglary, second degree; 3 years; Santa Clara; discharged October 2, 1880. Received November 22, 1880; assault to murder; 14 years; San Francisco.

Case No. 20—Received October 16, 1878; burglary, second degree; 2½ years; San Francisco; discharged October 16, 1880. Received November 29, 1880; burglary, second degree; 4 years; San Francisco.

Case No. 21—Received November 10, 1876; felony; 1½ years; Alameda; discharged February 22, 1878. Received June 30, 1879; burglary; 1 year; Kern; discharged April 30, 1880. Received December 13, 1880; burglary, first degree; 8 years; San Francisco.

Case No. 22—Received April 24, 1878; burglary; first degree; 3 years; San Francisco; discharged August 24, 1880. Received December 13, 1880; burglary, second degree; 2½ years; Solano.

Case No. 23—Received December 1, 1870; assault to do bodily injury; 2 years; Santa Clara; discharged September 18, 1872. Received May 21, 1879; assault with deadly weapon; 1 year; Fresno; discharged March 21, 1880. Received January 7, 1881; robbery; 1 year; Merced.

Case No. 24—Received November 27, 1873; felony; 2 years; Santa Clara; discharged August 16, 1875. Received March 2, 1877; burglary, second degree; 5 years; Santa Clara; discharged September 13, 1880. Received February 2, 1881; burglary, second degree; 4 years; Santa Clara.

Case No. 25—Received August 3, 1864; grand larceny; 1 year; Santa Clara; discharged June 1, 1865. Received November 14, 1865; burglary; 3 years; San Francisco; discharged June 1, 1868. Received July 12, 1868; attempted burglary; 3 years; Santa Cruz; discharged February 22, 1871. Received July 24, 1871; burglary and grand larceny; 5 years; Alameda; discharged October 6, 1875. Received July 21, 1876; burglary; 5 years; Alameda; discharged February 22, 1880. Received February 7, 1881; burglary, first degree; 15 years; San Francisco.

Case No. 26—Received April 3, 1875; assault to murder; 4 years; San Francisco; discharged May 5, 1878. Received April 16, 1879; burglary, second degree; 2 years; San Francisco; discharged December 15, 1880. Received March 1, 1881; robbery; 8 years; San Francisco.

Case No. 27—Received April 4, 1878; robbery; 4 years; San Francisco; discharged August 4, 1880. Received March 1, 1881; burglary, second degree; 5 years; San Francisco.

Case No. 28—Received September 20, 1876; robbery; 5 years; Los Angeles; discharged March 25, 1880. Received March 8, 1881; burglary, first degree; 3 years; Solano.

Case No. 29—Received November 9, 1878; robbery; 2 years; Sacramento; discharged July 9, 1880. Received March 15, 1881; perjury; 7 years; San Francisco.

Case No. 30—Received March 12, 1867; grand larceny; 5 years; Santa Cruz; discharged May 27, 1871. Received May 16, 1872; grand larceny; 2 years; Santa Cruz; discharged December 3, 1873. Received September 13, 1875; felony; 1 year; Santa Cruz; discharged July 24, 1876. Received October 10, 1876; grand larceny; 3 years; Santa Clara; discharged February 8, 1879. Received August 25, 1879; grand larceny; 1 year; San Luis Obispo; discharged June 25, 1880. Received April 12, 1881; larceny; 6 years; Santa Clara.

Case No. 31—Received August 27, 1878; grand larceny; 2 years; San Francisco; discharged April 27, 1881. Received March 23, 1881; felony; 1½ years; San Francisco.

Case No. 32—Received September 18, 1871; forgery; 1½ years; San Francisco; discharged January 2, 1873. Received November 10, 1874; forgery and larceny; 3 years; Monterey; discharged June 2, 1877. Received December 4, 1878; felony; 2 years; Santa Clara; discharged August 4, 1880. Received March 23, 1881; grand larceny; 2 years; San Benito.

Case No. 33—Received September 2, 1862; felony; 1¾ years; Solano;

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escaped June 18, 1863. Received September 24, 1864; burglary; 2 years; Calaveras; discharged September 24, 1866. Received February 7, 1868; robbery; ten years; Alameda; pardoned; discharged September 7, 1875. Received May 6, 1879; burglary, second degree; 2 years; Yuba; discharged January 6, 1881. Received March 24, 1881; burglary, first degree; ten years; Alameda.

Case No. 34—Received December 30, 1861; robbery; 3 years; San Francisco; discharged November 16, 1864. Received January 24, 1865; attempt to rob; 5 years; San Francisco; discharged April 5, 1869. Received April 16, 1879; grand larceny; 2 years; San Francisco; discharged December 16, 1880. Received March 24, 1881; burglary, first degree; 10 years; Alameda.

Case No. 35—Received September 9, 1879; felony; 1 year; Santa Clara; discharged January 9, 1880. Received April 16, 1881; assault to murder; 7 years; Kern.

Case No. 36—Received May 23, 1878; burglary, second degree; 2 years; San Francisco; discharged February 23, 1880. Received April 18, 1881; burglary, second degree; 3½ years; San Francisco.

Case No. 37—Received January 12, 1870; grand larceny; 6 years; San Francisco; pardoned; discharged May 15, 1873. Received May 22, 1877; grand larceny; 3½ years; San Francisco; discharged January 22, 1880. Received April 18, 1881; grand larceny; 4 years; San Francisco.

Case No. 38—Received November 26, 1869; robbery; 3 years; San Francisco; discharged June 17, 1872. Received January 19, 1877; burglary, first degree; 5 years; Alameda; discharged August 19, 1880. Received May 5, 1881; burglary, second degree; 1 year; Tulare.

Case No. 39—Received April 30, 1878; robbery; 3 years; Sonoma; discharged September 15, 1880. Received May 10, 1881; burglary, second degree; 2½ years; San Francisco.

Case No. 40—Received July 26, 1878; burglary, second degree; 2 years; San Diego; discharged March 26, 1880. Received May 16, 1880; burglary, second degree; 1 year; Los Angeles; discharged March 16, 1881. Received May 12, 1881; grand larceny; 10 years; Ventura.

Case No. 41—Received September 18, 1871; burglary; 5 years; San Francisco; discharged December 11, 1875. Received April 3, 1876; burglary; 7 years; San Francisco; discharged January 3, 1881. Received May 17, 1881; attempted burglary, first degree; 7½ years; San Francisco.

Case No. 42—Received October 13, 1875; housebreaking; 1 year; Alameda; discharged August 23, 1876. Received January 19, 1877; burglary, first degree; 6 years; discharged March 19, 1881. Received May 21, 1881; robbery; life; San Francisco.

Case No. 43—Received September 13, 1877; burglary, first degree; 3 years; Solano; discharged February 13, 1880. Received June 18, 1881; burglary, second degree; 3 years; San Francisco.

Case No. 44—Received November 6, 1875; burglary; 8 years; San Francisco; discharged March 5, 1881. Received June 21, 1881; robbery; life; San Francisco.

Case No. 45—Received November 2, 1875; housebreaking; 3 years; Sacramento; discharged June 22, 1877. Received April 15, 1878; grand larceny; 4 years; Yuba; discharged from Folsom April 15, 1881. Received July 5, 1881; robbery and felony; 7 years; Butte.

The foregoing record relates only to the convicts discharged during

Warden Ames' administration at San Quentin. It should be remembered that the whole number of commitments to the State Prisons of this State exceeds 10,000. You place the number of discharges from the prisons at forty per month, or nearly five hundred per year. In the short period of ten years past at least 5,000 persons have been restored from convict life and associations to society. These, added to the large number of ex-convicts from other States and countries, must, in the aggregate, compose a very large ex-convict population. If, as we believe to be the case, the influence of the penal system tolerated in our State Prisons, intensifies the criminal character of those upon whom it has operated, then it is irresistible that the prisons are daily augmenting the criminal classes in this commonwealth. This effect is due not alone to the character produced in the ex-convict of our own prisons, but also to the attractive forces exerted upon the ex-convicts of other communities by the light punitive character of prison life and discipline in this State.

Recurring now to the question of the influence exerted by the prisons upon the commission of crime, the conclusion is forced upon our minds, that to the existing condition a large percentage of the crimes committed is directly and indirectly attributable. We do not find evidence upon which to base a judgment that the present administration or the existing condition of the State Prisons of this State are in any respect exceptional. The system and abuses have existed from its inception to the present time. Its defects are radical, and they cannot be eliminated by the modifying influences of change in the personnel of administration.

THE EMPLOYMENT OF TRUSTIES.

In the general conduct of nearly all the departments of prison management convicts are employed. In such employments 127 prisoners are now engaged at San Quentin. They are used as teamsters, gardeners, butchers, stablemen, cooks, waiters, cell-tenders, janitors, gate-keepers, clerks, domestics in the families of officers, guards, and free men, and in some cases occupying the position of foremen over other convicts. These semi-official positions are looked upon as places of preferment, and are much sought after by convicts. Those holding trusty positions enjoy minor indulgences in the way of dress, separate dining-room and table, and are locked in their cells at a later hour than the main body of prisoners. This trusty system, in a few instances, results in a species of favoritism calculated to engender jealousies and produce the appearance of abuses. In each of the prisons the chief bookkeeper is a convict. In both cases they are accountants of first-class ability. Their relation with the officers of the prison is necessarily intimate, and their treatment is accordingly considerate and confidential. In each of the principal offices, except Captains of the Guard, convict deputies are to be found. The prison treatment of this class is scarcely distinguishable from the ordinary life of free employés of the prison. The attainment of these favorite positions is not through meritorious conduct, but is determined by the capacity for usefulness possessed by the prisoners to whom these positions are given. The system, which under existing conditions is thought to be irradicable, presents many features of glaring favoritism, and inspires the minds of convicts less favored with a sense of injustice and resentment. That the trust reposed in

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the trusty class is sometimes abused by them to the scandal of prison management was amply shown in the testimony given before us. An instance in the past history of the prison was given by a witness, where the acting Warden and a trusty convict became companions in a hunting expedition, and camping in the mountains over night. Taking advantage of his opportunity, the convict left the confiding Warden to conclude the sports of the chase alone. Of the same class of abuses is the instance referred to so frequently in the testimony of the violation of his parole by the convict Denson. Such cases are necessarily incidental to the system, and their recurrence at intervals may be expected while the system maintains. We believe it to be immediately practicable to introduce many modifications of the system. These favored positions should in no case be conferred upon new-comers. They should be made the highest rewards of merit. They should be conferred only upon such who, under proper tests, have manifested an unmistakably sincere desire to reform their lives. This principle of action would convert the trusty system into an instrumentality of good, instead of a prolific source of strife and envy, as is now the case.

EXECUTIVE CLEMENCY.

You referred to us for examination and report the question: "Has the pardoning power been exercised judiciously?" This question has received attentive consideration, and the facts bearing upon it have been diligently inquired into. From our examination we have been led to the unanimous conclusion that the power of Executive clemency has been exercised by you with firmness, caution, and wise discrimination. We find no instance where convicts pardoned by you have been rearrested or convicted of new offenses. The pardons granted by you and the considerations influencing your action in each case have received due attention. The reasons which have formed the basis of your action appears, to our minds, to have been just and cogent, and consistent with the proper exercise of the high prerogative vested in you by the Constitution and laws of this State. Your action in finding responsible guardians for boys under the age of fifteen years, and granting pardons in such cases, we deem to be especially commendable. As a cognate subject, we beg leave to present some considerations relating to

THE LAW OF COMMUTATIONS.

The paramount desire in the mind of the prisoner is to shorten his term of sentence by entire pardon or commutation. An appreciation of this fact led to the passage of the commutation law of 1863–4. As originally enacted the law allowed five days for each thirty days of good behavior. The record of credits was kept for each month, and for any breach of discipline, or failure in the faithful performance of labor the credits were canceled. By later amendments the credits were increased to ten days in each thirty of good behavior; but still the feature of requiring a positive and persistent record of good conduct was adhered to. In the legislative session of 1875–6 the celebrated Goodwin Act was passed. As interpreted by the prison authorities, the Act proceeds upon the presumption of good behavior, and requires that the commutation shall, from the beginning of a term of sentence, be construed to have been earned. The Act also increased the commutation. It allows a deduction of two months in each of the first two years; four months in each of the next two years, and five months in each of the remaining years of any term. To illustrate the prevailing method of allowing this commutation, suppose a convict to have been sentenced to a term of ten years, to date from January 1, 1880. Upon his entrance into prison his credits would be computed and allowed as follows:

Date of commencement, January 1, 1880. Term of sentence, ten years.

Deduct first two years two months each	4 months.
Deduct next two years four months each	8 months.
Deduct remaining six years five months each	30 months.
Total	42 months.

Or three years and six months from ten years' sentence, leave six years and six months. Date of discharge, June 30, 1886. The prison register would then show the number of the commitment, the name of the prisoner, description, date of sentence to be January 1, 1880, date of discharge, June 30, 1886. This presumptive commutation can be nullified only by affirmative or positive bad conduct of the prisoner. The law declares that "any convict who shall commit an assault upon his keeper, or any foreman, officer, or convict, or by any flagrant disregard of the rules of the prison, etc., shall forfeit all deductions of time earned by him for good conduct before the commission of such offense, but such forfeiture shall only be made by the Board of Directors, after due proof of such offense, and due notice to the offender." In practice, this commutation system arbitrarily shortens all terms of sentence. Good conduct is presumed, and the commutation entered to the credit of the prisoner from the first day of his term. A mere negative good conduct—that is to say, the absence of the violent assaults enumerated in the extract from the law given above, and the avoidance of "any flagrant disregard of the rules of the prison," secures the abbreviation of sentence. As a power in the hands of the officers of the prison, conducive of reform, or the discipline of industry, or other affirmative good conduct, the law is a conspicuous failure. It merely interferes arbitrarily with the sentences of the Courts to shorten them. Its benefits are shared alike by the industrious and indolent, as well as by the hardened criminal equally with the sincerely repentant. To be "a good prisoner," in prison parlance, is to be useful to the administration. The prisoners possessing diplomatic cunning usually gain all the recommendations for pardon, and all such drift through their term of sentence without incurring any cancellation of credits.

We have reason to believe that the Courts of the State are influenced in the exercise of discretion by the existence of this law. We have computed the average length of terms of sentence for the two years immediately preceding the passage of this law, and also for the two years immediately past. We find the average length of the term of sentence in the latter period to exceed the average of the former period sixteen per cent. This is almost the exact percentage of commutation upon the short terms, and the conclusion that it is imposed as an offset is at least probable.

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As now administered, we do not find any evidence that the law performs any good purpose in the administration of prison discipline. The violent offenses mentioned in the Act as the only cause for cancellation of credits are of rare occurrence under any system. If this commutation was to be earned by positive good conduct, and conferred by a system of marks for merit; if the date of discharge was fixed at the close of the full term of sentence, and the deductions mentioned in the law were established as the maximum which might be earned for good conduct, then the commutations would become a disciplinary and reformatory power of decided force and value.

THE QUESTION OF MANUFACTURES FROM JUTE.

The fifth question submitted to us for consideration and answer is as follows:

Fifth—Has the purchase of machinery and material by the Board of Directors, with a view of making the prison self-sustaining, been a wise and expedient measure, and has the appropriation been honorably and judiciously expended? In the examination of this question you will please bear in mind that after January 1, 1882, all convict labor by contract ceases.

The proposition for the employment of convict labor in the manufacture of fabrics from jute fiber, we believe, originated with the Chief Executive of the State. The provision of the new Constitution prohibiting the employment of convict labor under the contract system, and requiring the employment of such labor on behalf of the State, after January 1, 1882, created an exigency in the prison management of the State not easily met. To provide for this important coming change many plans have been suggested. The great desideratum was profitable employment for the convicts. The field of suggestion was restricted by many and various limitations. A strong popular spirit of opposition existed to the employment of convict labor in such lines as would compete with the established industries of the State. The demand for sacks in this State to be used in the shipment of grain is enormous. But a very small portion of this demand is supplied by home manufacture. Of the 43,000,000 sacks placed in stock within the past twelve months, less than 4,000,000 were manufactured within the State, as against 39,000,000 imported from Calcutta, in India, and Dundee, in Scotland. The suggestion of manufacturing sacks with the convict labor at the command of the State was one answering in many ways the requirements of the case, and, from an obvious view of the situation, one calculated to be received with much favor. The proposition received attention in the inaugural message of your Excellency, and was first introduced to public favor in that document. In attempting to trace the subsequent history of the steps by which this undertaking reached its present forward state of advancement toward completion, we have examined the official records of the Board of Prison Directors, and find there is no record of any order having been made by said Board declaring its intention, as the authorized directory of the prison, to enter upon the manufacture of jute. There is no record of any order to erect buildings suitable for such works. There is no record of any

order to purchase material, or instructions as to rate or quality. There is no record of any declaration of intention to enter upon the enterprise in any form. There is no record of any specifications, or scheme, or plan, from which the character or extent of the works may be learned. There is no record showing the reference of any of these things to committees for consideration, nor no report of any committees. In the absence of official records of these important matters, we were forced to resort to such information as the memory of the Directors would afford. The first reference made to the subject in the minutes of transactions of the Board is to be found on page 54, general records of the Board, and is contained in the minutes of a meeting held at San Quentin, August 17, 1880, and is as follows:

Director Everson offered the following resolution, which was adopted:
Resolved, That this Board enter into a contract with Messrs. Fairbairn, Kennedy & Naylor, of Leeds, England, for one hundred looms, and the accompanying machinery, for the manufacture of material from jute.

This first appearance of the subject in the records is not only after all the plans, specifications, etc., had been made—if any such ever existed—but is at the point when a contract for the manufacture of the looms and accompanying machinery is entered into. The second reference is found on page fifty-seven, and is contained in the minutes of a meeting held in San Francisco August 21, 1880, as follows:

Director Everson offered the following, which was adopted:
Resolved, That a contract be entered into with Messrs. Fairbairn, Kennedy & Naylor, of Leeds, England, to furnish the State Prison at San Quentin with one hundred looms, as per specifications presented to this Board by their agent, John E. Stevens, for the manufacture of jute bags, and the terms of payment to be as follows: The full amount of said contract to be £12,881 16s; two thirds of the said amount to be paid in net cash bills on London, when ready for delivery on shipboard at Liverpool, and the remainder in like bills when said machinery arrives in San Francisco.
On motion of Director Schell, the President of the Board was authorized to sign the contract with Fairbairn, Kennedy & Naylor, of Leeds, England, as an act of this Board.

The foregoing extracts present all that is found of record on the subject.

We find, from testimony taken before us, that Warden Ames addressed communications to various manufacturers of jute machinery in England and Scotland. The responses to these communications have not been placed in our possession. We are informed that one firm submitted plans for jute works and estimates of cost. The plans may be seen in the office of the Warden, but the estimates are mislaid and lost.

It appears that the contracting firm of Fairbairn, Kennedy & Naylor sent John E. Stevens from New York to act as their agent, with full power to enter into a contract for the work. The terms of the contract were as follows:

Order for machinery to Fairbairn, Kennedy & Naylor, Leeds; from Messrs. the California State Prison Board of Directors, San Quentin:

Jute Preparing and Spinning Machinery for seven-pound to ten-pound yarns for the manufacture of Burlaps, etc.

	£. s.
One jute softener of large size, with 31 pairs of helical fluted rollers, and with patent butching apparatus	330 00
Two shell-breaker cards, 4x6 cylinder, 1 doffer, 2 pairs of rollers, and with covering complete	350 00
Amount carried forward	£680 00

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Amount brought forward	£680 00
Four circular finisher cards, 4x6 cylinder, complete, with covering	920 00
Four patent link gill, first drawing frames, 2 heads each	400 00
Four spiral second drawing frames, 3 heads each	432 00
Four regulating spiral roving frames, 56 spindles each	1,148 00
Fourteen double dry spinning frames, 12 spindles each, 3¾ pitch, 28s	2,508 16
One single twisting frame, 48 spindles, 5 pitch, 6 traverse, 40s	96 00
Furnishings for this machinery, consisting of sliver cans, bobbins, listing for the driving spindles, feed sheets for cards, wrenches, taps, and dies, etc.; also, spare card covering spindles, flyers, and other articles, but not drums, shafting, nor belting	1,000 00
Weaving machinery to make burlaps up to 45 inches wide:	
Four cap winding machines, 60 spindles each, 38s	456 00
Four warp winding machines, 60 spindles each, 28s	336 00
Two yarn dressing machines, with 4 cylinders each, with bobbin banks for 1,200 threads for each machine	680 00
One hundred Hessian looms, 52½ reedspace, 1 yarn beam, and three change pinions for up-take	2,700 00
One dumping machine, 96 inches wide	38 00
One heavy five-bowled chesting calender, 96 inches wide; 2 paper rollers, 27 inches diameter; 2 cast-iron bowls, 20x23 inches diameter; and 1 steam bowl, 13½ inches diameter, all complete	605 00
One measuring machine, 96 inches wide	60 00
One sack-cutting machine, 64 inches wide	72 00
Furnishings for the foregoing weaving machinery, consisting of spare yarn beams, change wheels, shuttles, reeds, combs, warping bobbins, etc., but exclusive of drums, shafting, and belting	750 00
Total	£12,881 16

CONDITIONS AND TERMS.

The machinery is to be packed and delivered free on board vessel at Liverpool, ocean freights and insurance to the debit of State Prison Board of Directors; but Messrs. Fairbairn, Kennedy & Naylor will use their offices to obtain lowest possible rates.

Payment in net cash bills on London as follows, viz: Two thirds the above amount when the machinery is ready for delivery on shipboard at Liverpool, and the balance in like bills when said machinery arrives at San Francisco.

Note.—In case the shipment is not effected all at one time, then the payments shall be understood to apply to invoice value of portion shipped, and not to the total amount.

Know all men by these presents, that, whereas, the Board of State Prison Directors of the State of California deem it expedient to purchase machinery for the purpose of manufacturing jute bags at the State Prison at San Quentin, California, under and by virtue of the power and authority vested in them by the Constitution of the said State and the laws thereof. Now, therefore, this agreement, made and entered into this twenty-first day of August, A. D. 1880, by and between Fairbairn, Kennedy & Naylor, of Leeds, England, the parties of the first part, and the people of the State of California, by A. H. Chapman, Wallace Everson, W. F. McNutt, J. H. Neff, and G. W. Schell, constituting the State Board of Prison Directors of said State, the parties of the second part, witnesseth, that the parties of the first and second part mutually agree, one with the other, as follows: That the parties of the first part covenant and agree, to and with the said parties of the second part, to furnish said parties of the second part all the machinery for the manufacture of jute burlaps, as specified and enumerated in the specifications hereto attached and made a part of this agreement; said machinery to be all complete and of the best quality, for the sum of £12,881 16s (say twelve thousand eight hundred and eighty-one pounds sixteen shillings) sterling, payable according to the terms and conditions stated in and attached to the said specifications which are made a part thereof; the said machinery to be properly packed and delivered free of charge on board of vessel at Liverpool, England, on or before the first day of December, 1880, for shipment to San Francisco, as the said parties of the second part may order.

And the parties of the second part, in consideration of the premises, and of the covenants on the part of the said parties of the first part, agree to pay to the said parties of the first part, for said machinery, the sum of £12,881 16s (say twelve thousand eight hundred and eighty-one pounds sixteen shillings) sterling, in the manner as stated in and attached to the said specifications hereto attached and hereinbefore referred to.

In witness whereof the said parties of the first part, by their duly authorized agent, John E. Stevens, and the said parties of the second part, by their President, A. H. Chapman (pursuant to resolution of said Board this day made and entered on their minutes), have herewith set their hands and seals the day and year first above written.

(Sig.) FAIRBAIRN, KENNEDY & NAYLOR,
[L. s.] By John Ed. Stevens.

[L. s.] A. H. CHAPMAN,
President Board Prison Directors.

By the terms of the above agreement it will be observed that 66⅔ per cent. of the contract price was to have been paid before the machinery was shipped from England, and the balance was to be due and payable upon the arrival of the machinery on shipboard in the harbor of San Francisco. By this agreement, Fairbairn, Kennedy & Naylor were amply protected as to the performance of all covenants on the part of the State, but the latter was not, in any respect, guaranteed as to the quality of the machinery furnished. It appears to your Commission that a sufficient sum should have been retained in the hands of the State to cover any damage arising by reason of any imperfection in the machinery furnished. To have withheld the last payment until the machinery had been placed in position and its efficacy tested, would not, in our opinion, have been an unreasonable requirement.

To the date of our investigation, Warden Ames had paid to Fairbairn, Kennedy & Naylor, on account of the first consignment of machinery arrived, the sum of $41,733 85, and, on account of freight charges and duty, to Balfour, Guthrie & Co., the sum of $7,146 65, making a total paid to July 14, 1881, of $48,880 50.

The limit to this investigation does not afford time to ascertain, as to whether the price paid for the machinery and other terms of purchase, were in accordance with the best interests of the State. The only conclusions of fact we desire to present, are: First, the history of the transaction cannot be traced by the records; second, the method by which this contract with Fairbairn, Kennedy & Naylor was concluded did not secure to the State the advantages of competition.

The next reference to the subject found in the journals of the Board bear date of April 5, 1881, as follows:

> At a meeting held in San Francisco, April, 1881, on motion, it was ordered that the Board advertise for proposals for furnishing an engine, 250-horse power indicated, for the jute factory at San Quentin, naming character and make of same, and send proposals to J. P. Ames, San Quentin. On motion, a committee of two were appointed to act in conjunction with J. P. Ames, Warden, in the matter of purchasing two boilers for San Quentin. The Chair appointed Directors Everson and McNutt as such committee.

The above record relative to engine and boilers is found on folio one hundred and ten.

At the same meeting it was ordered "that an order be drawn on the State treasury for $44,000, for the purchase of material, machinery, etc., from the appropriation made for the jute factory."

The reference made in the closing sentence of the above extract is the only minute relating to the purchase of jute. From testimony taken we find that contracts were entered into with Degemer & Co., of San Francisco, for 250 tons of raw jute, and with Balfour, Guthrie & Co. for 250 tons, at $100 per ton of 2,240 pounds. This material has been received and is now in store. The amounts paid to July 14, 1881, are as follows:

Degemer & Co.	$17,878 77
Balfour, Guthrie & Co.	24,464 28
Hauling	100 00
Storing	357 00
Insurance	550 00
Balfour, Guthrie & Co.	539 46
Storing	131 50
Total	$44,021 01

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We find that the rate paid for this material was the lowest obtainable market rate.

THE CONTRACT FOR MOTIVE POWER.

In the minutes of the meeting held at San Francisco, April 5, 1881, already quoted, the Board ordered an advertisement calling for bids to furnish a steam engine and boilers of 250 horse-power. Such advertisement appeared in the journals of San Francisco, April 6th. It called for bids to furnish an engine of "250 horse-power indicated." Said bids to be sent to the Clerk of the prison at San Quentin, to be opened April 14th. The Board of Directors held a regular meeting, with a full Board present, April 14th, but the minutes of said meeting contain no reference to the receipt of bids in answer to the advertisement, nor no other reference to the subject. We could not learn from the testimony of the Directors specifically the nature of the transactions of that day. The testimony showed that bids were received as follows:

Risdon Iron and Locomotive Works	$10,000
Pacific Iron Works	7,500
Fulton Iron Works	7,250

Copies of these bids were furnished us, and they are herewith transmitted as a part of the testimony taken.

It was in testimony that the firm of Prescott, Scott & Co. were bidders, but the bid presented by this firm, on April 14th, could not be found. On April 16th, however, Prescott, Scott & Co. addressed a letter to the "State Prison Directors," of which the following is a copy:

SAN FRANCISCO, April 16, 1881.

State Prison Commission:

GENTLEMEN: Inclosed find specifications of the engine for the jute factory, as we propose to furnish same—24 inches diameter of cylinder, and 60 inches stroke of same; band-wheel, 18 feet diameter and 43 inches face, turned on face and balanced; shaft 12 inches in main journal, 13½ inches where band-wheel fits on same; out board box, with adjustable quarter boxes, and sole plate—for the sum of eight thousand ($8,000) dollars in gold coin. Or we will deliver you an engine of the same size, usually recommended by other builders, namely: 24 or 28 inches diameter, 48 inches stroke, with either a band-wheel 16 feet diameter for 30 inches of belt, or a segment fly-wheel 18 feet diameter, not suitable for a belt, for the sum of seven thousand ($7,000) dollars in gold coin, delivered at the wharf in San Francisco.

Our own experience proves, that to transmit that power the hand-wheel should be eighteen feet in diameter and belt forty-two inches wide, and the engine should be sixty inches stroke to give the owners good results, though the short stroke is cheaper for the builders.

Respectfully,

PRESCOTT, SCOTT & CO.

We do not find in the books of Prescott, Scott & Co. any trace of the propositions submitted April 14th, the date at which the bids of other firms were opened. We have the oral testimony of all parties to the transaction that such bid was submitted. From and after April 16th, the negotiations appear to have been conducted chiefly by Warden Ames. No further records or written testimony appear until May 12th, when, at a meeting held at San Quentin, Directors Neff and Everson are appointed a committee to act with Warden Ames in the purchase of engine, boilers, etc., for the entire power for the jute mills.

Under date of May 20th, we find a letter written by Prescott, Scott & Co. to Warden Ames, referring to specifications submitted April 16,

and proposing to furnish engine and boilers, built in accordance with specifications (herewith transmitted as a part of the testimony), for the sum of $17,200—the work to be delivered and set up in perfect running order at San Quentin. It is in testimony that a contract for the motive power was entered into by and between Prescott, Scott & Co. and Warden Ames, acting for the State, at the above figures. At this point it will be clearly perceived that the State became under the obligations of a contract to accept this engine and boilers at the stipulated price of $17,200. The fact should not be overlooked that the bids of April 14th were for supplying an engine only, while the contract closed with Prescott, Scott & Co.. about May 25th, was for the supply of an engine and four steel boilers.

The next letter from Prescott, Scott & Co. bears date of June 8th, and is as follows:

SAN FRANCISCO, June 8, 1881.

Judge J. P. Ames:

DEAR SIR—The engine for the jute factory as now ordered is a thirty-inch cylinder on a shaft for a twenty-four cylinder. In looking over the engine I think it will give you better satisfaction to put in the shaft, outboard box, and sole-plate, crank pin and crank to suit the thirty-inch cylinder. We will make this change if you will pay the current price for the extra weight of these articles over and above the twenty-four-inch engine; then the shaft will take all the cylinder can give, and you will be able to crowd your work without trouble. Should you agree with me, please advise, that I may be prepared to make these changes without delay.

Respectfully,

PRESCOTT, SCOTT & CO.

From subsequent transactions we presume that the suggestions contained in the above letter were adopted by Warden Ames. As the State was under obligation to take an engine of Prescott, Scott & Co., and to pay $17,200 therefor, the enlargements suggested in the letter of June 8th, above quoted, could be subjects of private contract with that firm only. Such contract was made and now exists. Presumably in answer to inquiry the following self-explanatory letter was written:

SAN FRANCISCO, June 20, 1881.

Honorable J. P. Ames:

DEAR SIR—The engine, boiler, and fixtures, in accordance with conditions mentioned in letter of May 20, 1881, are to cost $17,200; large cylinder and condensing, etc., $3,500; large shaft and fixtures, $1,400; total as now ordered, $22,100.

Respectfully,

PRESCOTT, SCOTT & CO.

We have been at great pains to ascertain as to whether the sum to be paid for the work Prescott, Scott & Co. are to furnish was economical and equitable. We caused the specifications for this work to be printed, and by methods calculated to secure genuine bids for duplicates of the work at the hands of manufacturers, both here and in eastern cities, we find the contract price to be fair and reasonable. The lowest bid obtained by us for the work Messrs. Prescott, Scott & Co. are under contract to perform for $17,200, from a California manufacturer, was $16,900, not including delivery and placing in running order at San Quentin. The lowest bid from an eastern firm was $17,000, delivered free of freight charges on board cars at San Francisco. To the price of $17,200 the sum of $4,900 was added for increase of capacity and dimensions and change of form, etc., thus raising the existing contract price to the sum of $22,100. We find the amount to be equitable, the lowest bid for the increase obtained being $7,300. Therefore, while the method by which this contract was let is far from being above criticism, the result attained proves to be satisfactory. The meagerness and otherwise unsatisfactory data obtain-

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able from the prison records, as well as the lapsed memory of the agents of the State, forced us to appeal to the books of the firm of Prescott, Scott & Co., and to the testimony of Irving M. Scott, as the only source of intelligent information as to the terms and conditions of the existing contract for the motive power under consideration.

From the foregoing it will be seen that the execution of the plan for employing convict labor in the manufacture of jute fabrics was entered upon without legislative authorization. The erection of the extensive buildings external to the walls of the prison at San Quentin was begun early in the Summer of 1880. The contract for the jute machinery bears date of August 21, 1880, but by an Act approved March 4, 1881, the Legislature of the State appropriated the sum of $219,000, to be used in the purchase of machinery and for the erection of buildings, etc., as follows:

An Act making appropriations for the purchase of jute, jute machinery, lands, and erection of buildings for the manufacture of jute, for the State Prison at San Quentin, and other expenses incidental and relating thereto, approved March 4, 1881.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The sum of two hundred and nineteen thousand dollars ($219,000) is hereby appropriated out of any money in the State treasury not otherwise appropriated, to be paid to the State Board of Prison Directors, to pay for the purchase of jute, jute machinery, lands, and erection of buildings for the manufacture of jute, and other expenses immediately appertaining to the carrying out of the object of this Act, for the State Prison at San Quentin.

SEC. 2. The Controller of State is hereby authorized and directed to draw his warrant upon the State Treasurer, in favor of said Prison Directors, for said sum, and the State Treasurer is hereby directed to pay the same when presented.

SEC. 3. This Act shall take effect immediately.

The Act places no restrictions upon the manner in which the sum appropriated shall be expended, beyond defining its general use and purpose. It requires the Controller to draw his warrant for the sum of $219,000, in favor of the Directors, and commands the Treasurer to pay said warrant when presented.

The estimates of cost which formed the basis of this legislative action, were as follows:

Jute machinery from England	$100,000
Belting	3,000
Buildings	40,000
Engines and boilers	25,000
Jute and other material	50,000
Total	$218,000

We present the amount called for by contracts now existing and sums already expended, in the following exhibit:

Paid for purchase of jute	$44,021 01
Paid Fairbairn, Kennedy & Naylor	41,733 85
Paid freight and duty	7,146 65
Due Fairbairn, Kennedy & Naylor	20,388 00
Prescott, Scott & Co.	22,100 00
Estimated freight and duty on future consignments of machinery	6,000 00
Cost of buildings for jute mills	40,000 00
Total	$181,389 51

Leaving available of the appropriation the sum of $37,100 49, from which must be deducted the sum already spent in unreported incidentals and to be spent in the completion of the work, which, with other costs plainly in view, will fully equal this sum.

Recurring now to the question: Has the appropriation been honorably and judiciously expended? permit us to call your attention to the fact, that to the present date but $92,901 51 has been expended. Of this sum, $44,021 was paid for jute material, and we find this sum to have been honorably and judiciously expended. We find the obligation to pay $22,100 for motive power to be economical and equitable. We find no evidences of other than honorable transactions in the payment of other sums expended in this behalf; but the condition of the official records of the Board, and the methods by which the contracts for all the machinery were let, we condemn as illegal, unbusinesslike, unsafe, and justifying severe censure.

THE QUESTION OF PROFIT.

As to whether the undertaking will prove profitable to the State financially, can only be determined after a full and fair trial. In advance of the experiment conclusions are purely speculative. The officers of the prison are indulging sanguine hopes of a brilliant success. These hopes are founded upon purely theoretical computations. The jute now in stock cost $100 per ton of 2,240 pounds, or four and one half cents per pound. The standard "cental sack" weighs twelve ounces. Making due allowance for waste in manufacture, the material in each sack costs at present rates three and three quarters cents. The wholesale mercantile rate to manufacturers will not, for some time at least, fall below eight cents per sack. This gives a theoretical margin of four and one quarter cents added to raw material. In the merchandise produced, this estimate of the relative proportion of material to labor, gives forty-seven per cent. cost of material to fifty-three per cent. as cost of manufacture. The theoretical capacity of the mills to be established, is placed at 2,000,000 per annum, with 400 operatives. This gives $160,000 as the gross product, with cost of material, $75,200; value added to material by processes of manufacture, $84,800. As a private enterprise, the cost of labor would be the largest item to stand charged against this latter sum. But the prison officers claim that the State has all the labor required to do this work now employed, and except as to free labor required to direct the convict labor, no charge on account of labor should be made, thus leaving nearly the entire sum of $84,800 dollars available as against cost of manufacture. The factors of cost would be: Free labor employed, oil, and material other than jute, repairs to machinery, wear and tear of machinery, fuel for power, freight, commissions, clerk hire, and unanticipated incidentals. A further advantage to the commonwealth is supposed to reside in the fact that the manufacture of jute will stimulate the production of the fiber by our agriculturists. These calculations afford a considerable margin for discount upon theoretical results. Superficially they appear plausible. Your Commission is, however, compelled, for many practical reasons, to regard them as visionary and misleading.

From information obtained, as well as from testimony given before us, we are led to the conclusion that all manufactories conducted by convict labor in prisons is at the greatest disadvantage as regards every factor save the one of cheap labor. The single inducement then to the establishment of any manufacturing enterprise in a prison with convict labor, is the cheapness of the manual labor or hand skill. Since this is the single advantage, it follows that only such enterprises as engage in the manufacture of products not capa-

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ble of being produced by machinery, and in the production only of that class of articles wherein the cost of labor largely exceeds the cost of material, can be made successful. We repeat that manufactories in prisons are at disadvantage as regards every element of cost entering into the production of wares and merchandise except the single fact of labor, hence the employer of prison labor will enjoy no competitive advantage as to any other element, and the larger this factor the more reasonable the probabilities of success.

For many years the jute plant has been produced in the East Indies and the West India Islands. The seat of manufacture from this fiber has been the city of Dundee, in Scotland. The fabrics made from it are principally in the line of matting and carpeting. A considerable proportion of the manufactures from this fiber has been in the line of coarse fabrics for canvas used in packing other goods and raw materials, such as cotton, wool, etc. California and Australia created the demand for the "cental sack," as it is called by manufacturers, for the shipment of grain. In the production of all these fabrics almost automatic labor-saving machinery is employed. The chief supply of jute comes from India, the chief points of commerce in this article being at Calcutta and Madras. Within the past few years large manufactories of the fabrics made from jute fiber have been established in India, where, to the economy of highly improved labor saving machinery is added the advantage of the cheapest hand labor to be had in the whole world. From the best obtainable information we find that in the experience of the manufacturers in India, the manual labor represented in the production of "cental sacks" is less than ten per cent. as against ninety per cent. for material and other costs of manufacture. The manufacture of grain sacks in California, whether with free or convict labor, must meet the East India competition, and convict labor will inevitably fail in the production of any article wherein the cost of hand labor is so inconsiderable, as in the case under consideration. Nor will the freight from Calcutta to San Francisco constitute an element of protection. Upon information obtained from competent and intelligent sources, we base the unqualified opinion that jute cannot be profitably grown in California. It is a tropical plant, requiring for its full development a hot, moist climate, with a high degree of temperature at night during the period of its growth, climatic acquirements not found anywhere in California. It is true that the plant will grow here, but the information was conveyed to us by a gentleman long a resident of the jute growing districts of India, that the plant would not attain a hight of over three feet in our climate, while a profitable production, even in India, requires a growth of five feet in hight.

The raw material must then come to us from India, and the freight upon this material will eliminate the protection this freight element would otherwise afford. A still more directly practical view is afforded by the experience of manufacturers. With the jute grown and manipulated by the cheapest labor in the world, with the best machinery and cheapest operative labor, the manufactories of India have not as yet paid any dividend to the capital invested in them. Nor does the experience of the manufactories at Dundee afford greater encouragement. Except during the period of the "cotton famine," occasioned by the "war of the rebellion" in this country, the manufacture of jute at Dundee has not been regarded as profitable. From the theoretical capacity of the mills about to be established a heavy discount must be made. Nearly all the manual labor employed in supplementing the machinery used in the manufacture of jute is skilled labor. Convict labor is notably unskilled and untractable. It is an unrewarded toil—an involuntary servitude. The slavery of serving time may be enforced, but the requirement and application of skill are subjects of a cheerfully-consenting will; they cannot be compelled. For years the contractors have purchased this consenting good will—not of the State, but of the convict himself—by the use of money, by indulgences, by hopes of reward, and by persuasions and sympathy; things inconsistent with proper penal discipline. But even under the stimulus of these illegitimate means, it is in testimony before us that convict labor is not worth more than fifty per cent. of free labor. For your better instruction as to the value of convict labor, we respectfully refer you to the testimony of Donald Sutherland, who, for the past seventeen consecutive years, has been a Superintendent of convict labor at San Quentin; also to the testimony of Messrs. Koons, Falvey, and ——, all experienced and intelligent observers. The success of any manufacturing enterprise depends upon the reliability, faithfulness, intelligence and willingness of the productive labor employed in it. The jute mills will call for four hundred operatives answering to these requirements. Convicts as a class have neither the capacity nor the disposition to acquire skill of any kind. The number of mechanics and artisans among the convicts is phenomenally small. Of the one thousand five hundred and thirty convicts in the penal institutions of this State, less than —— were mechanics or artisans at the time of their conviction. We therefore entertain grave apprehensions as to the adaptability of this labor to the successful manufacture of jute fabrics. For these and many other reasons we cannot share the confidence which seems to have inspired this important undertaking.

ABSENCE OF LEGISLATION CONCERNING THE JUTE ENTERPRISE.

That the Board of State Prison Directors should have felt themselves justified in entering upon the manufacture of jute, particularly upon the extensive scale we find to have been inaugurated, is the occasion of some surprise to our minds. We do not find, either among the expressed or implied powers of the Board, any legal authorization for this action. The general powers conferred by the Constitution is found in section two, article ten, of that instrument, and is as follows:

> SEC. 2. The Board of Directors shall have the charge and superintendence of the State Prisons, and shall possess such powers and perform such duties in respect to other penal and reformatory institutions of the State as the Legislature may prescribe.

Section five of the same article provides that the Legislature may pass such laws as may be necessary to further define and regulate the powers and duties of the Board. In pursuance of this provision, the Act to define, regulate, and govern the State Prisons of California, approved April 15, 1880, and the Act amendatory thereof, approved April 13, 1881, were passed. We do not find in these enactments any authorization which, to our minds, conferred upon the Board of Directors the powers exercised in the case under consideration. The provision relied upon as conferring authority in the premises is found

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in section twenty-one of the Act of 1880, as follows: "All convicts not employed on contracts may be employed by authority of the Board of Directors under charge of the Wardens and such skilled foremen as he may deem necessary, in the performance of work for the State, or in the manufacture of any article or articles which, in the opinion of the Board, may inure to the best interests of the State; and the Board of Directors are hereby authorized to purchase from time to time such tools, machinery, and materials, and to direct the employment of such skilled foremen as may be necessary" to carry out the provisions of this section.

The authority given here is restricted to the purchase from time to time of tools, machinery, and material. But the jute enterprise, as inaugurated, required the exercise of powers beyond any we conceive to have been conferred by the provisions quoted. It required an extension to the prison in the way of erections and buildings estimated to cost, when completed, $40,000. It required the purchase of over $64,000 worth of machinery at one time. It also involved an immediate purchase, as merely a first installment in a line of such purchases, of $50,000 worth of material. By the provisions of an Act approved March 23, 1876, Section 3234 of the Political Code, it is required, that in all cases where the Commissioners, Directors, Trustees, officer, or officers to whom is confided by law the duty of devising and superintending the erection, alteration, addition to or improvement of any State institution costing in excess of the sum of $3,000, shall cause to be made accurate plans of such improvement, addition, or alteration, and also accurate bills showing the exact amount of all the different kinds of material necessary to such erection, addition to, or alteration of any State institution, which plans, bills of material, etc., shall be submitted to the Governor, State Treasurer, and Secretary of State for their approval. None of the provisions of this law were complied with as necessary legal preliminaries to the establishment of the jute mills now in process of erection at San Quentin. The mills being erected constitute an extensive enlargement of that prison. We submit for your consideration the legal questions involved without comment.

MILEAGE.

Concerning the question of salary and mileage, we find that the State Prison Directors suggested and promoted the passage of the Act approved April 13, 1881, which contains the following section:

SEC. 2. Section 17 of said Act is hereby amended so as to read as follows: Section seventeen. The Directors shall receive no compensation other than ten cents per mile for traveling expenses, and one hundred dollars ($100) per month for other expenses incurred while engaged in the performance of official duties. The Warden shall receive a salary not less than two thousand and four hundred dollars ($2,400), and not to exceed three thousand dollars ($3,000) per annum, in the discretion of the Directors. The Clerks shall receive one thousand and five hundred dollars ($1,500) per annum, and all other officers and employés shall receive such compensation as the Board of Directors shall deem just and equitable in each case.

The original Act, approved April 15, 1880, allowed the Board of Directors twenty cents a mile for miles actually traveled while engaged in the discharge of official duties; but provided, also, that

"every such account, certificate or voucher shall be filed with the State Board of Examiners, and a duplicate thereof with the Clerk of the prison." This provision was stricken out by the Act of April 13, 1881, and in lieu thereof the following provision was inserted:

SEC. 4. Section 20 of said Act is hereby amended so as to read as follows: Section twenty. On payment of any moneys into the State treasury, as provided in this Act, the Wardens and State Treasurer shall report to the Controller of State the amount so paid, and the State Treasurer shall give the Wardens a receipt therefor, which receipt shall be filed with the Controller. The Wardens shall report to the Controller of State the amount of money paid into the said treasury by them during each month, and shall also report to said Controller of State the amounts received and disbursed by them every three months, and during the period for which such report shall be made, which quarterly report shall be signed by the Warden and at least three of the Directors.

The Constitution of the State, Article X., Section 4, declares:

The members of the Board shall receive no compensation other than reasonable traveling and other expenses incurred while engaged in the performance of official duties, to be audited as the Legislature may direct.

We do not presume to enter upon a discussion of the constitutionality of the Acts of 1880 and 1881, already quoted, but we are abundantly justified in saying that the Convention which framed the Constitution sought to establish offices of trust and not of profit in creating this Board of State Prison Directors. We have also ample reason for the affirmation that the popular understanding was in accord with this statement. We are further justified by evidence before us in affirming that when the present Directors accepted, at your hands, this high trust, they themselves well understood that they each were accepting positions of trust and not of emolument. It is, and has been, well known to every citizen that the office of State Prison Director was a "non-salaried" one. The progression of legislation toward converting these "non-salaried" positions into highly remunerative offices will not escape your attention. That the State Prison Directors were to be reimbursed for traveling and other expenses incident to traveling actually (not constructively) incurred while engaged in the performance of official duties, is the most obvious meaning of the section of the Constitution quoted. But the claims for these expenses were to exist by reason of having been "actually incurred," and as such existing claims they were to be "audited as the Legislature might direct."

The Act of April 15, 1880, provided that the Directors should receive for traveling and other expenses twenty cents a mile for miles actually traveled while engaged in the performance of official duties. In so far as this allowance would exceed the amount of expense actually incurred, we believe it to be inconsistent with the obvious reading of the Constitution; but it possesses the semblance of conformity by providing that miles should be traveled before a claim for reimbursement of the sum expended in such travel could exist, and also provided that the State Board of Examiners should audit such claims. Less than one year had elapsed after the passage of this Act, when the existing law was approved. That law, as already shown by quoting its provisions, provides that each Director "shall receive ten cents per mile for traveling expenses, and $100 a month for other expenses incurred while engaged in the performance of official duties." The employment of the words "other expenses incurred" imports to our

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minds a limitation upon the expense to be incurred—a definite maximum beyond which no reimbursement would be made. The Directors do not, however, so construe the law. They declare that this Act confers upon them the right to draw from the public treasury $100 per month each, even when they have incurred no expense whatever in the discharge of official duties. They have acted upon this interpretation of the law, and have each drawn $100 per month, besides ten cents per mile for miles actually traveled. If this construction be tenable, then the Act of April 13, 1881, attached a salary to the office of State Prison Director which may accrue and be drawn by mere incumbency of office.

The Act of 1881 excluded the provision relating to the authority of the State Board of Examiners in the premises, and in lieu thereof permitted the Warden to pay the bill for mileage. In practice, it is in testimony before us that the Directors audit their own accounts, and certify to and allow their own claims. The Act of April 13, 1881, failed to direct how these claims should be audited, and since in practice they are audited by the claimants themselves, we are justified in reporting that, applying the legal and business significance of the term audit to the practice herein noted, these claims are not audited at all.

From the progress made in the direction of attaching remunerative salaries to the offices of State Prison Directors in one year, the inference may fairly be drawn that the pronounced tendency here noted needs to be exposed and checked.

The origin of the suggestion to which the Act of April, 1881, is due is not far to seek. An exhibit of the sums drawn for mileage by each Director brings the origin of the suggestion clearly to view.

The Directors assumed the discharge of official duties January 14, 1880. Up to June 12, 1880, the mileage vouchers were cashed by the Warden at San Quentin. Just prior to this latter date the State Board of Examiners notified the Directors that thereafter the vouchers would be audited by that Board. From June 12, 1880, to March 14, 1881, the vouchers were filed with the Controller. This will explain the reason for presenting the exhibit made below in two amounts as to each Director. The sum of the two amounts covers the entire period of the mileage law of April 16, 1880:

A. H. Chapman—January 14, 1880, to June 12, 1880	$865 21	
June 12, 1880, to March 14, 1881	1,858 20	$2,723 41
J. H. Neff—January 14, 1880, to May 30, 1880	$775 20	
May 30, 1880, to March 14, 1881	1,043 20	$1,818 40
Wallace Everson—January 14, 1880, to May 30, 1880	$296 00	
May 3, 1880, to March 14, 1881	878 00	$1,174 00
G. W. Schell—January 14, 1880, to June 9, 1880	$448 60	
June 9, 1880, to March 14, 1881	1,155 05	$1,603 65
W. F. McNutt—January 14, 1880, to June 12, 1880	$148 80	
June 12, 1880, to March 14, 1881	87 20	$236 00

By reason of the distances traveled by them, and the profit arising upon the allowance of twenty cents per mile, Directors Chapman, Neff, and Schell received the largest compensation. The end sought was the equalization in some degree of the compensation. It is in testimony before us that Directors Chapman and Neff did not interest themselves in the passage of the Act of 1881. On the contrary, they expressed their indifference as to the fate of the bill. From the foregoing exhibit it is easy to determine whether the Act of 1881 will increase or diminish the cost to the State of the services to be rendered by the Board, and for this purpose the following comparative exhibit is made:

COMPARATIVE STATEMENT

Of the amounts which were paid to the State Prison Directors under the law of April, 1880, and what would have been paid for the same services under the law of April, 1881.

Directors' Names.	Dates of Payments.	Amount actually paid under law of April, 1880—20c per mile.	Amount which would have been paid under law of April, 1881—10c per mile and $100 per month.	Decrease.	Increase.
A. H. Chapman	January 14, 1880, to June 12, 1880—5 months	$864 21	$932 60		$67 39
	June 12, 1880, to March 14, 1881—9 months	1,858 20	1,829 10	$29 10	
J. H. Neff	January 14, 1880, to May 13, 1880—4½ months	775 20	837 60		62 40
	May 30, 1880, to March 14, 1881—9½ months	1,043 20	1,471 60		428 40
Wallace Everson	January 14, 1880, to May 1, 1880—3½ months	296 20	498 60		202 40
	May 1, 1880, to March 14, 1881—10½ months	878 20	1,489 60		611 40
G. W. Schell	January 14, 1880, to June 9, 1880—say 5 months	448 60	724 30		275 70
	June 9, 1880, to March 14, 1881—say 9 months	1,155 05	1,477 52		322 47
W. F. McNutt	January 14, 1880, to June 12, 1880—5 months	148 80	574 40		425 60
	June 12, 1880, to March 14, 1881—9 months	87 20	943 60		856 40
	Totals	$7,555 46	$10,777 72	$29 10	$3,251 36

It will be observed that the totals above given represent the gross amount of mileage paid from January 14, 1880, to March 14, 1881. From the latter date the new law is operative, and under it the Directors have filed vouchers to dates and in amounts as follows:

A. H. Chapman, mileage to May 23	$255 10	
Salary, two and a half months, to May 31	250 00	$505 10
J. H. Neff, mileage to May 30	$273 30	
Salary, two and a half months, to May 31	250 00	$523 30
George Schell, mileage to May 11	$142 80	
Salary, two and a half months, to May 31	250 00	$392 80
Wallace Everson, mileage to May 23	$82 00	
Salary, two and a half months, to May 31	250 00	$332 00
W. F. McNutt, mileage to April 21	$56 60	
Salary, two and a half months, to May 31	250 00	$306 60

In this observation of two and a half months the financial result is equalized in a considerable degree. As against the mileage system of 1880—

Director Chapman loses	$5 10	
Director Neff loses	23 30	$28 40
Director Schell gains	$107 20	
Director Everson gains	168 00	
Director McNutt gains	193 40	$468 60

Thus while Director Chapman, who was the largest beneficiary under the old law, loses but $5 10, and Director Neff loses but $23 30,

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Director McNutt, the least compensated under the old order, gains $193 40, and Director Everson gains $168.

To these amounts there remains to be added mileage and salary for the months of June and July, 1881, which may be estimated from the basis furnished by the vouchers for mileage and salary from March 14th to May 31, 1881. This gives totals as follows:

Director Chapman	$3,578 51
Director Neff	2,784 50
Director Schell	3,295 45
Director Everson	1,706 00
Director McNutt	767 60
Total from January 14, 1880, to July 31, 1881	$12,230 06

A further construction given to this law by one of the Directors, notably, to wit: Director Everson, is to the effect that mileage may be charged to and from any point within the State where a Director may chance to be when called to attend a meeting of the Board or discharge an official duty. Director Everson, being on a visit of recreation to Etna Springs, makes two trips to San Quentin during such visit, charging in his voucher for July, 1880, 180 miles for each trip, and adding thirty-six dollars to his voucher for each trip. This Director resides at Oakland, but has his regular place of business in the City of San Francisco. His vouchers show that when he has attended meetings of the Board at Folsom, he has charged mileage from San Francisco and return, adding twenty miles to his voucher for each of such trips, while for meetings held at San Quentin he has charged mileage from Oakland and return, adding twenty miles for each such trip, and for meetings and committee work in San Francisco he has charged mileage from Oakland and return, adding twenty miles to his voucher for each of such trips. In the vouchers presented by this Director dated July 31st, there are nineteen items for mileage from Oakland to San Francisco of twenty miles each, and eight from Oakland to San Quentin, forty miles each. If we allow Director Everson's claim for mileage from San Francisco to Folsom because the former city is his place of business, and try the voucher filed July 31, 1880, by that standard, we find the following result:

Total miles 1,060, at 20c. per mile	$212 00
Deduct miles charged from Oakland to San Francisco, 540 miles; Etna Springs, 360 miles; total deduction, 900 miles, at 20c	180 00
Legitimate charge	$32 00

We have not applied this form of test to the other vouchers filed by Director Everson. The entire file is submitted to you as a part of the testimony taken by us. In the judgment of this Commission, neither the Act of 1880 nor the Act of 1881 admits of the construction placed upon it by Director Everson. The action in using San Francisco as the basis of charges for mileage to Folsom, and Oakland as the basis of charges for mileage to San Francisco and San Quentin, does not grow out of legal construction or inadvertence, but is, in the judgment of this Commission, the result of a conscious purpose, on the part of Director Everson, to augment the amount of his claims for mileage.

These vouchers also present plainly a great lack in the economic appointment of meetings. In a majority of the months the charges

for round trip mileages show the meetings attended to have been held at such close dates that the Directors living at the greatest distances must have been kept almost constantly traveling.

In his voucher filed July 31, 1880, Director Schell gives the following dates of charges:

July 3—Modesto to San Francisco—miles	115
July 5—San Francisco to San Quentin	13
July 7—San Quentin to San Francisco	13
July 7—San Francisco to San Quentin	13
July 8—San Quentin to Modesto	128
July 10—Modesto to Folsom	101
July 13—Folsom to San Francisco	114
July 14—San Francisco to San Quentin and return	26
July 18—San Francisco to Modesto	128
July 29—Modesto to San Quentin and return	256
Total	907

Or $181 40 for mileage.

Director Chapman's voucher for the same month shows him to have traveled 1,482 miles to attend meetings, aggregating $296 40 for mileage in one month. Had the meetings attended been held at such time as would have enabled the Directors to attend all in a single round trip, a material saving to the State could have been effected.

OPINION OF THE ATTORNEY-GENERAL.

Since the foregoing portion of this report was written, as a precaution against error, your Commission decided to refer the legal questions at issue to the Attorney-General of the State. The reply received is appended as follows:

SACRAMENTO, August 15, 1881.

The Commission to investigate certain matters connected with the State Prison, recently appointed by the Governor, has asked my opinion as to the proper construction and the constitutionality of section two of an Act of the Legislature of this State, entitled an Act to amend sections eleven, seventeen, eighteen, and twenty, and to repeal section thirty of an Act entitled an Act to define, regulate, and govern the State Prisons of California, approved April 15, 1880. The latter Act was passed and approved March 14, 1881.

Section two of the latter Act amends section seventeen of the former, so as to make it read as follows: "Section seventeen. The Directors shall receive no compensation other than ten cents per mile for traveling expenses, and $100 per month for other expenses incurred while engaged in the performance of official duty, etc.

If, by this section, it was intended to authorize the Directors to receive the ten cents per mile, and the $100 per month, whether that amount of expense was incurred or not, it is clearly and unquestionably in conflict with Section 4 of Article X of the Constitution, and under it, not even the actual expenses of the members of the Board can be drawn from the treasury. If, on the other hand, it was only intended by the section to limit the amount of actual expenditures to ten cents per mile and $100 per month for each Director, then the section cannot be construed as allowing to any Director any amount in excess of his actual expenditures, and no amount exceeding what had actually and necessarily been incurred in the performance of official duties could lawfully be paid to any Director under its provisions.

The section is peculiarly and awkwardly framed. It provides that "no compensation other than ten cents per mile for traveling expenses, and $100 per month for other expenses incurred," shall be received by the Directors. The language of the section itself seems to require that the expenses should be incurred before the amount should be received. From the section alone it is apparent that it was not the intention of the Legislature to donate to the Directors the amounts or either of the amounts mentioned. The Act simply undertakes to authorize the payment of the expenses incurred by the Directors, but to limit those expenses to ten cents per mile for traveling, and $100 per month for other expenses incurred. This construction is materially aided by the provisions of Section 4 of Article X of the Constitution, which reads as follows:

"The members of the Board (State Board of Prison Directors) shall receive no compensation other than reasonable traveling and other expenses incurred while engaged in the performance of official duties, to be audited as the Legislature may direct."

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It is obvious from the very language of the foregoing provision of the Constitution, that any construction of any Act of the Legislature which would give to the Directors anything more than actual expenses, would necessarily construe the Act to be a palpable and flagrant violation of the plainest words of that provision; and it is a rule of universal application that where an Act of the Legislature is susceptible of more than one interpretation, that construction should be adopted which will make the Act conform to, and meet the requirements of, the Constitution.

I am therefore of the opinion that the said Act does not purport to authorize the Directors of the State Prison to receive anything other than reasonable and actual expenses for their official services, and it may not be out of place for me to say that I so advised one of the Directors some time ago. I have the honor to be yours respectfully,

A. L. HART, Attorney-General.

THE PURCHASE OF BRICK LANDS.

Section 12 of the "Act to define, regulate, and govern the State Prisons of California," approved April 15, 1880, reads as follows:

SEC. 12. The Board of Directors shall have power, in their discretion, to purchase any clay lands suitable for brick making, that may lie contiguous to the San Quentin prison grounds, not to exceed in value the sum of $15,000.

The bill which was made a basis for this law was introduced as early as January, 1880. It appears from the testimony of the Board that they had no concious knowledge of the fact that this provision had been incorporated into the bill. It appears in the testimony given before us that the owner of this brick land had, for some time prior to the introduction of that bill, sought to make sale of this land to the prison. The land in question is a portion of a tract comprising three hundred and seventy-six acres, owned by Daniel Porter, of San Francisco. The fifty-two acres immediately adjoining the prison grounds contains deposits of clay suitable for brick making, and is an irregular fraction of the larger body. The summit of a hill running north and south across this narrow strip forms a natural segregation line in making a judicious subdivision of the tract. Some data must have been present in the minds of the legislative committee which influenced the amount of appropriation written in the bill, and from testimony before us we find the amount to have been named with reference to the purchase of the particular fifty-two acres (52.055) subsequently purchased for the sum of $15,616, or $300 per acre. The conveyance is dated July 14, 1880. We are unable to state with any satisfactory definiteness as to who acted for the State in conducting the negotiations for this purchase. Hon. W. H. Sears represented David Porter (the owner of the land), and the records contain a brief mention of the appointment of a committee in relation to the matter consisting of Directors Everson and McNutt, but the powers conferred upon this committee are not enumerated. Director Chapman, in giving his testimony, gave from memory the name of Director Schell as the representative of the State, but Director Schell testified that the only part taken by him was in the matter of hastily examining the abstract of title. The amount for the payment of the purchase price was drawn in favor of J. P. Ames, in the sum of $15,616. This warrant was assigned in blank and delivered to W. H. Sears, attorney for David Porter. There is no record of the report of any committee informing the Board as to the value of the land, or its adaptability to the uses for which it was being purchased;

no report of progress in negotiations, and no record of the time or occasion when the Board reached a conclusion or agreement among its members as to the method of the purchase or the price to be paid. The right to make this purchase was vested in the discretion of the Board. We find no record of any transaction creating an agency to act for the Board in the premises. The right of condemnation existed, but there is no evidence that proceedings in condemnation were at any time suggested or contemplated in the councils of the Board. From the evidence before us, the transaction appears to have reached a conclusion somewhere outside of the Board, and to have been in a negative way acquiesced in by that body.

As to the value of the land, our examination of it leads to the conclusion that it contains large deposits of clay valuable for brick making. It is in testimony that this clay is worth fifty cents per cubic yard, if sold for removal. Estimated by this standard, the clay contained in the land is worth a sum largely in excess of the price paid. As illustrating this method of arriving at the value of the land, the following statement of the brick-making account from April, 1880, to July 1, 1881, as derived from the books of the prison, is represented here:

STATEMENT OF BRICK ACCOUNT, APRIL, 1880, TO JULY 1, 1881.

Brick on hand April 1, 1880 (estimated)	700,000	
Brick on hand June, 1880, to July, 1881	3,900,000	4,600,000
Brick sold April, 1880, to July, 1881	1,675,630	
Brick used April, 1880, to July, 1881	1,509,500	
Brick on hand July 1, 1881	1,400,000	4,585,130
Value of brick sold (1,675,630)	$12,649 49	
Value of brick used (1,509,500)	9,852 75	
Value of brick on hand July 1, 1881	9,100 00	$31,602 24
Expense for burning brick	$14,504 76	
Profit and loss	1,000 00	
Purchase of brick land	1,500 00	$30,504 76
To which add value of 800,000 brick molded and now being burned in Kiln No. 8	$5,200 00	

It was also given in testimony that lands valuable for brickmaking had returned, in single instances, over $1,000 per acre from the sale of clay. It was shown that, over ten years ago, brick and other adjacent lands had been sold to the State for $250 per acre. Mr. Worn, a real estate broker, and the owner of lands in the vicinity of the prison, testified that the lands purchased were not worth more than $75 per acre to a private purchaser, but that, considering the necessities of the State, the price was not too high. He thought at least $225 per acre of the purchase price represented the necessities of the State. On behalf of the prison management it was offered in proof that a small piece of land, for the purpose of building a reservoir, was purchased by a former administration from William T. Coleman, and that the price paid was $500 per acre. On the other hand, the witness J. McM. Shafter, a large proprietor of lands lying in the same vicinity, declared the land purchased not worth more than $60 per acre.

Having due regard to the value of all the evidence before us, your Commission finds that the purchase of the land was a great necessity. The prison contained a large number of unemployed convicts, and

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for moral and disciplinary reasons their employment was a necessity of the time; that their employment in making brick has been financially profitable to the State; and generally, that the result of the purchase has proven highly advantageous to every interest of the prison. We are, however, forced to regard the business methods of the Board, as illustrated by this whole transaction, as loose and unsatisfactory. The right of condemnation existed, and proceedings in that form of acquiring title, in our judgment, should have been invoked. According to testimony given before us, David Porter admitted to George A. Worn (the witness testifying to this fact) that it cost him (Porter) about one half the price paid to him to get the sale through its various stages. This David Porter denied, under oath, stating that it cost him but $250, which sum was paid to W. H. Sears, his attorney. We refer to this matter because the testimony has acquired the widest publicity, and we deem it an act of justice to the Board of Prison Directors to say, that there is no evidence connecting any of the members of the Board with any corrupt acts relating to this purchase. As already stated by us, the evidence points clearly to the conclusion that the participation of the Board in the whole transaction was plainly in the nature of the ratification or acquiescence in an understanding reached somewhere external to the councils of the Board.

THE STATE PRISON AT FOLSOM.

The limits of this report will not admit of a recitation herein of the legislation by which what was originally called the Branch State Prison at Folsom was established. As at first established, it was a branch of the main prison, and was evidently designed to be an auxiliary institution, performing a distinctive office in the penal system of the State. It was strongly urged as an argument in favor of the establishment of this "branch" institution, that its existence would afford an opportunity for such classifications of convicts as are justified by the best experience in the science of penology. It was to have been a reformatory or probationary prison, as the highest interests of the penal system of the State might require or experience determine. In short, it was designed to perform a part in a penal system, rather than serve as a mere division of the old penitentiary into two independent prisons. An economic and industrial reason was found in the opportunity the location afforded for the employment of convict labor in dressing stone. It was also urged as a paramount consideration that the mechanical power of the American River could be developed by prison labor, and that this cheap power would make practicable and profitable many branches of prison employment. Divested of these considerations, the locality possesses neither reformatory, climatic, industrial, or economic reasons, to recommend it as a location for a State Prison.

The bearings of the Folsom Prison upon the whole question of prison administration in this State has, to our minds, the most far-reaching and practical significance. We beg leave, therefore, to present fully, and at the same time in the most direct manner at our command, the important relations it sustains to the whole subject of

prison management. On the thirtieth day of June, 1868, the State entered into an agreement with the Natoma Water and Mining Company for the conveyance of 350 acres of land, situated on the south side of the American River. This agreement conveyed the said lands to the State for the consideration of $15,000, to be paid in the labor of convicts at the stipulated rate of fifty cents per day, or 30,000 days' labor, in aid of the construction of a water-power canal. In addition to the 350 acres of land, the State, by virtue of the terms of this agreement, acquired valuable rights, set forth in said agreement as follows:

* * * Also, the exclusive right forever to the use of the first fall five feet perpendicular of the whole water of the canal at the upper end of that place on the canal, known as "prison yard," with all rights, privileges, and easements necessary for the taking and enjoyment of power from said fall; it being understood that the said party of the first part reserves to itself the subsequent power resulting from the flow of water in said canal after the first fall as aforesaid, and that this instrument is not to be construed as granting unto said State the right to divert said water, or any material quantity thereof, permanently from said canal. To have and to hold, all and singular, the above-mentioned and described premises, together with the appurtenances, unto the said State of California forever.

The canal referred to in this extract from the agreement is planned to be constructed with a cross-section of 24 feet bed width, 32 feet surface width, and 8 feet deep. Its theoretical power, with a fall of five feet at the prison, is 330 horse power. The Natoma Water and Mining Company has expressed its willingness to increase this fall to eight feet, giving a theoretical power equivalent to 481 horse power.

By deed of the third of June, 1874, the Natoma Water and Mining Company conveyed to the State 133 acres of land adjoining the tract of 350 acres conveyed to the State in 1868, increasing the amount of land conveyed to the State to 483 acres. On the twenty-ninth day of June, 1878, a contract was entered into between the State and the Natoma Water and Mining Company, by which it was covenanted that the State on its part would locate and complete the Branch Prison, and the Water and Mining Company would employ 350 convicts, paying for their labor fifty cents per day for five years. The item of this agreement, covering this undertaking, is as follows:

Second—Within thirty days after the completion above mentioned, the party of the first part will furnish, and the party of the second part will take, under this contract, 100 of said convict laborers; within two months after such completion, 100 additional of such laborers shall be furnished and taken as aforesaid; and within three months after such completion, 150 more of said laborers, making the full number of 350, shall be furnished and taken as aforesaid; provided, however, that in case the party of the second part should require portions of the aggregate number earlier than the first date above mentioned, then it is understood and agreed that the party of the first part will furnish such portions so required, if it shall be convenient so to do, and not otherwise, the question of such convenience to be determined exclusively by said party of the first part.

The Natoma Water and Mining Company were also, by the terms of the agreement, given the exclusive use of the extensive quarries located on the prison lands, to be worked by convict labor. Thus the State has disposed of 30,000 days' labor in payment of the purchase price of the land conveyed to it, at fifty cents per day, and 534,000 days' labor, at fifty cents per day, for which latter service the State is to be paid in money. Together these contracts dispose of convict labor to the value of $282,000. We assume that these contracts, having been entered into prior to the adoption of the new Constitution, their obligations are not impaired by the provisions of that instrument, which forbids the employment of convict labor by contract.

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The State is secured by a good and sufficient bond for the performance of all agreements entered into by the Natoma Water and Mining Company. These agreements were under consideration for more than ten years. They received due attention at the hands of five legislative sessions, and formed the basis of legislative action. In pursuance of them the State has already expended over $250,000 in the erection and proper equipment of a Branch Prison. It was supposed that by virtue of these covenants the State had disposed of prison labor to the value of $282,000, upon terms and at rates highly advantageous to itself. We have no evidence upon which to base an opinion that the present Board of State Prison Directors have made any effort looking to the execution of these contracts. Director Chapman stated, that in his opinion (see testimony), it would require a guard force of such magnitude as to make the employment of prison labor in the construction of the canal unprofitable to the State. All the executive officers of the prison at Folsom testified, that an increase of the present guard force of from four to six guards would be ample to admit of the employment of three hundred and fifty convicts, according to the terms of the agreement.

We have already referred to the fact that, in its original conception, the Branch Prison was in the direction of affording opportunity for a better classification of the convicts confined in the penitentiaries of the State. Whatever of reformatory ideas may have prompted the establishment of this branch was deliberately abandoned by the State by the law of April 15, 1880. Section one of that Act declares that: "The prison heretofore known as the 'Branch Prison,' shall be known hereafter and designated as the 'State Prison at Folsom,' and all its finances and other accounts shall be kept separate from those of the State Prison at San Quentin, * * * and it shall be lawful for Courts to sentence convicts to the State Prison at Folsom or the State Prison at San Quentin, in their discretion." As at present existing the prison at Folsom is an independent penitentiary, with a full official staff, a separate guard corps, and a complete prison equipment, the entire cost of which is an additional expense to the maintenance of the criminals, as against the incarceration of all in the original prison at San Quentin. As now conducted, Folsom Prison has little else than the character of a State jail. Beyond the forcible detention of State prisoners within the walls of a prison, it performs no office in the penal system, and presents no reformatory, penal, or industrial features worthy of consideration.

The payroll for salaries of officers and guards at the Folsom prison aggregate the sum of $27,000 per annum. The per capita cost per day for maintenance is fifty-eight cents, as against thirty-two and a half at San Quentin, an excess per capita per day of twenty-five and a half cents. The average number of prisoners maintained from the beginning of the present year, to date, was 298. The excess of the daily per capita at Folsom is principally due to the fact that the salary bill is divided by the small number of 298 prisoners instead of the number 1,200, as at San Quentin. This salary bill, in reality, represents the excess of annual cost to the State by reason of maintaining a prison at Folsom, as against confining all the convicts of the State in one prison. So long as the prison is conducted as a separate institution; so long as the prisoners are maintained, as now, in either absolute idleness or unproductive employment, we do not perceive where the compensation to the State, by reason of dividing

its prison into two parts, is to be found. The remedy for the existing state of things, is to make at once an earnest effort to test the value of the theories upon which the Branch Prison was originally founded. A division of the prison is indispensable to any reformatory system. Unless it can be made to perform the disciplinary office originally urged as a reason for its establishment; unless the execution of the existing contract for prison labor can be entered upon; unless the development of a cheap mechanical power is practicable, and unless the prison labor can be profitably employed in cutting stone, we fail to see how an advantage is to accrue to the State from the maintenance of this prison. The State has already expended over $300,000 in this experiment of maintaining two prisons. Up to this time the experiment at Folsom affords no material for judgment as to the value of results. The questions involved remain as problematical as they were in 1868, when the first legislative enactment looking to the establishment of the prison was passed. The office this prison can be made to fill in the development of a proper penal system is treated of elsewhere. We desire in this place to express our opinion of the industrial policy which should control in the future management of this prison.

Upon the evidence of experienced officers we base the conclusion that the construction of the water-power canal with prison labor, from the granite dam now completed and situated three fourths of a mile above the prison, to the town of Folsom, is practicable. Walls around the prison-yard and inclosing the granite quarries should be built at once. A large number of prisoners would there find employment in cutting stone, while the construction of the canal would afford a cheap power to be utilized in the processes of polishing granite. This would enable the prison to produce merchantable stone work in lines suitable for monumental, ornamental, and building purposes. As already shown, labor in these employments, to the amount of $282,000, is already contracted for. The market, then, for labor in these employments to the amount of $282,000 is already assured. Certainly, no more favorable conditions for making an experiment with prison labor in stone-cutting could exist. The completion of the contract will afford a satisfactory test of the profitableness of this class of work, and the cost of the experiment will have been borne by the company now under contract to employ 350 convicts for five years.

Considered as a penal institution, this Folsom prison, as at present existing, has perhaps no counterpart in all the history of prisons. Except such as find employment in the work of construction—which makes but slow advancement—the prisoners perform the general work of the prison in the culinary department, and are occupied as cell-tenders, janitors, servants, stable-keepers, firemen, etc. The system, copied from San Quentin, is congregate in name, but unrestrictedly social in fact. The prisoners are humanely treated, are well clothed and well fed, while the entire prison within is cleanly and well kept. The books and accounts are plainly kept, and the system of purchase such as to merit approval. Our inspection brought under our personal observation the table fare, and we found it to be fully equal to that of the average boarding-house fare, and in many respects superior to the daily food of the honest and industrious laboring population. With respect to food, clothing, shelter, or toil, prison life in the penal institutions of this State is not a hardship.

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In all these respects the condition of the convict is better than that of the free laboring citizen, and much superior in point of plenty and comfort to any of the almshouses or hospitals maintained at the cost of either public or private benevolence. The State treats her criminals with a generosity that is not accorded to the indigent or the worthy poor. We witnessed at the close of the mid-day meal at the Folsom prison an extravagant rejection of wholesome food, and a consignment to waste of untouched bread, beef, and potatoes, such as would not be tolerated in any private household in the State.

CHARGES OF CORRUPT PROPOSITIONS BY OFFICERS.

An accusation was conveyed to us, charging an officer of the prison with having made corrupt proposals to a contractor engaged in furnishing certain supplies.

P. J. Shafter, contractor, who has at various times furnished fuel to the State Prison at San Quentin, under contracts made with the Warden, testified that Fulton G. Berry, Commissary of the prison at San Quentin, made corrupt proposals to the witness relative to the purchase of two thousand cords of wood. The nature of the proposition testified to was to the general effect, that the Commissary would use his influence to secure the witness a contract for supplying two thousand cords of wood, provided the witness would divide with the Commissary the profits arising out of said contract. The testimony of the witness to the fact of this proposition having been made, was clear, positive, and unequivocal. Mr. Berry was allowed to testify in his own defense against this accusation, and in his testimony, denied having made the alleged corrupt proposition. The alleged conversation was not had in the presence of any other witness; we are therefore without other testimony than the affirmation of the accuser and the denial of the accused. An attempt was made to show personal animus on the part of the witness against the Commissary, which failed.

Various other accusations, of which information was conveyed to us, failed for the want of any testimony to support them, or were clearly disproven.

SOME GENERAL RECOMMENDATIONS.

We have presented, in a final review which will conclude this report, our views and conclusions upon the general question of a proper prison system, and have sought to justify them by reference to the experience and testimony of the leading penologists of the world. We are, however, fully aware of the fact that the development of a higher system from existing conditions will be of slow growth. We venture, therefore, in this place to suggest some changes of more immediate and practical application.

First—In our opinion all commitments should be made to the

prison at San Quentin. A building suitable for cellular confinement and cell employments should be erected adjacent to and connected with the present prison. All prisoners when first received into the prison should be subjected to a disciplinary term of such duration as would enable the Warden to determine their true character and history. The prison at Folsom should be made a distinctively penal institution. Prisoners should be drawn from San Quentin to Folsom as soon as their proper classification is determined. The prison at San Quentin should be conducted as a reformatory, or at least a secondary stage of punishment. By a system of marks of merit prisoners at Folsom could earn the right to be transferred to the lighter and more desirable state of imprisonment at San Quentin; and by a like system of marks for demerit, prisoners at San Quentin could be punished by sentence under rules to the more primitive stage of imprisonment at Folsom. The existence of the two prisons affords opportunity for the introduction of this one great feature of a proper penal system. The Board of State Prison Directors possesses the legal power to introduce this reform. Section one of the Act to define, regulate, and govern the State Prisons of California, provides that the Board of Directors shall have power to transfer prisoners from either prison to the other one, when, in their judgment, such transfer is for the best interests of the State.

Second—The transportation of prisoners from the jails of the various counties is at the cost of the State treasury. The county Sheriffs receive seven dollars per diem, and all traveling expenses for themselves and prisoners, while conveying such prisoners to the State Prison. In the aggregate, this per diem and expense amount to a very large sum per annum, and a very large saving could be effected by adopting the plan of officially notifying the Wardens of the conviction and sentence of prisoners, and placing the delivery of such convicts from the jails to the State Prisons in charge of those officers. The Wardens could detail an experienced and competent guard to escort the prisoners, and thus save the entire amount of per diem now allowed the Sheriffs. This recommendation, with supporting facts and statistics, was brought to our attention by Albert Hart, Esq., Private Secretary to your Excellency.

Third—We find the liability of rearrest upon existing indictments or newly discovered offenses to operate injuriously upon the prison history of a large number of convicts. No prison system can effect anything in the way of reformation upon the mind of a prisoner who is drifting aimlessly through a term of penal sentence, expecting an immediate rearrest upon his discharge. In some cases the rearrest is wholly unexpected. The prisoner has manifested every disposition to reform his life; has been industrious, and by faithfulness and diligence, has accumulated an amount sufficient to bear his expenses where he may begin life anew, when, upon his discharge, a Sheriff stands at the gate with a warrant for his arrest for some untried indictment or newly discovered offense, and the ex-convict is borne away to a County Jail to await in tedious confinement a new trial, and to receive, perhaps, a new sentence. The contemplation of such a probability inspires the mind of the convict with most hopeless and gloomy views of his condition, and ingenuity could not devise a more insurmountable obstacle to reform or improvement. Legislation should address itself to the task of affording a remedy for this great wrong.

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Fourth—If the power does not already exist, it should be conferred upon the Courts to suspend sentence, after conviction, in all cases where it shall appear to the judgment of the Court that such suspension would be for the best interests of the State. If the prisoner over whom such sentence is suspended commits a second offense, or habitually associates with criminals, or by any other act manifests to the Court that the crime of which he was convicted grew legitimately out of his natural propensities, then the Court may have such prisoner brought before it for sentence. This recommendation was urged upon our attention by the Hon. Creed Haymond, whose arguments in favor of its practicability and value we will transmit at an early day.

Fifth—The worst features of the congregate system cannot be eliminated without many changes in the present construction of the prisons, but they may be materially modified by the immediate introduction of so much of the associate silence system as may be found applicable.

Sixth—In our judgment, every consideration of economy imperatively demands that in the selection of prison industries those only should be selected wherein the employment of the convict will afford opportunity to learn a useful trade. Under the contract system now existing a prisoner is taught to perform only a small portion of the operations necessary to the production of wares, furniture, and other manufactured articles, but he does not acquire that knowledge or skill which would enable him to follow a mechanical pursuit when he leaves the prison.

Seventh—At the close of this year all prison labor by contract ceases, and the prisoners will be employed on behalf of the State. The materials for such employment must be purchased, and the wares and merchandise produced must be disposed of. The organization and successful prosecution of the various industries will demand the undivided attention of a most capable Superintendent. The best executive ability for this position should be secured. Up to this time the increased burden of executive duty, arising out of the preparations in progress to manufacture bags from jute, has fallen upon the Warden. The official duties legitimately belonging to his office are ample to fully occupy the entire time and attention of the most capable Warden, and the organization of the industries alluded to should at once be departmentized and placed under the management of a competent Superintendent.

Eighth—After the first of January next, the State will become a manufacturer by the employment of convict labor on its own behalf. With the product of this labor it will appear in the market as a seller. There are, in the State Insane Asylums, some two thousand patients; for many of these, clothing, and boots, and shoes are purchased by the State. As a seller, the State will become a competitor with merchants; and as a purchaser, it is often the victim of combination. To the extent to which it may be found practicable, the clothing, and boots, and shoes furnished by the State to the asylums, should be manufactured by convict labor. The brick used by the State in the erection of buildings, should be purchased in San Quentin. An addition is being made to the Insane Asylum at Stockton, and a condition of the contract for that building should have made it obligatory upon the contractor, to purchase the brick in San Quentin. All stone used in the construction of buildings for the State should be obtained

at Folsom; and in all other instances where prison labor can be utilized in the manufacture of articles required by the State, such labor should be directed to the production of that class of articles.

Ninth—The Board of Directors maintain an office in San Francisco, and employ a Secretary under salary. The law requires that at least one meeting shall be held at each prison in each month, and that the Clerks of the prison shall act as Secretaries of the Board when the meetings are held at the respective prisons. Meetings are also held at the office at San Francisco, and the Secretary of the Board acts as Secretary for such meeting. The liability to a confusion of records arises out of the multiform Secretaryship. The maintenance of an office at San Francisco may be a convenience, but the convenience is not sufficient to compensate the cost; we therefore recommend the office at San Francisco, and the Secretaryship attached to it, be abolished.

Tenth—At the present time, the prisoners enjoy the almost unrestricted privilege of correspondence with the outside world. This correspondence should be placed under better safeguards, and should be strictly limited to family or personal affairs. The intercourse between the friends of convicts, who visit them at the prison, should be placed under rule, and guarded with greater vigilance by the prison authorities. Current publications of the day, which at present afford a convenient method of communication between the criminal classes inside and outside of the prison, should not be permitted to the convicts at all; their reading should be confined to books judiciously selected by the officers having authority in the premises.

THE CHARGES MADE BY THE SAN JOSÉ MERCURY.

In your letter of instruction to us you say: "Recently charges of serious character have been made by the public press, reflecting upon the Board of Prison Directors and Warden in charge of the prison at San Quentin." We find these charges to be contained in an editorial which appeared in the San José Mercury, entitled, "Necessities for a Change."

The charges presented in this editorial are susceptible of formulation, as follows:

First—The assertion that presents were made by the Warden of the Prison at San Quentin to the Prison Directors.

We find that some presents of inconsiderable value were offered by the Warden to the Directors, but their acceptance was declined by the Directors, and such articles as were retained in their possession were subsequently paid for.

Second—The waiver of constitutional right in the appointment of subordinate officers by the Warden.

This question has received full and ample treatment in another department of this report. The charge is sustained by our findings.

Third—Tyrannical and overbearing conduct towards the appointees of the Directors by the Warden.

Mr. Owen's information appears to have been derived chiefly from an appointee of the Directors. The amplified form of this charge

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recites, as a well known fact, the accusation that the Warden had waived his constitutional right in the appointment of subordinates in favor of the Directors. It then proceeds to declare, that the Warden's treatment of such appointees has been tyrannical and overbearing, in order to force them to resign, so that their places might be filled by selections of his own. The charge is an admission that the informant had forced himself upon the official staff of the prison through the usurpations of the Board.

The leading defect in Warden Ames' method of administration consists in over-attention to details of department work committed to subordinate officers. Good administrative ability consists in the accomplishment of plans through subordinates. To secure the highest executive efficiency in the official staff of the prison, something must be left to the discretion of subordinates. This over-management on the part of the Warden has led to frequent and measurably unnecessary interference with the details of duty assigned to subordinate officers; but no evidence in support of the charge of the arbitrary treatment of one class of officers more than another, was presented.

Fourth—The charge of intemperance on the part of the Warden.

By the testimony of two witnesses, a single instance was brought to our attention where the influence of intoxicating drink was manifested by an unsteadiness of gait. Beyond the statement of these witnesses and the single instance referred to, there is no evidence justifying the conclusion that the Warden's habits as to intemperance were such as to in any degree impair his usefulness as an officer. The preponderance of testimony was in favor of the general sobriety of the Warden. A number of credible witnesses, intimately acquainted and associated with the Warden, testified to his general sobriety and vindicated him in our minds against any charge of intemperance.

Fifth—Withholding from convicts money allowed by law.

No testimony in support of this charge was presented. An examination on our part justifies the conclusion, that the money allowed by law to convicts is paid to them in accordance with the terms of the law and the proper exercise of discretion on the part of the Warden.

Sixth—Withholding from convicts money deposited by them with the Warden.

No testimony was offered in support of this charge. Our investigation leads us to believe that it was not justified by the facts.

Seventh—Failure to account for gate-money.

As in the two former instances no testimony was offered in support of this allegation. From our examination we find that the gate-money is properly accounted for.

Eighth—Favoritism to convict Denson.

The testimony establishes an incident wherein the convict Denson violated his parole to the extent of paying a visit in the night time to the village of San Rafael, a distance of some four miles from the prison. We find this violation of his parole and breach of prison discipline to be an incident of the trusty system which prevails and has prevailed in the prisons of this State. The whole subject of the trusty system has received attention in another department of this report.

Ninth—Abuse of Mr. Cummings, Moral Instructor, and threats of personal chastisement against that officer.

The testimony does not sustain the charge. Some personal altercation occurred between Mr. Cummings and the Warden, growing out of some propositions made by Mr. Cummings concerning the release of prisoners whose time had not expired. An inharmonious feeling had for some time existed between the Warden and the Moral Instructor, and the altercation which formed the basis of this ninth charge seems to have been participated in equally by the two parties.

Tenth—Deceiving convict Hartwell as to the matter of his pardon.

No testimony was offered in support of this charge. We have no knowledge of the circumstances which justified its publication. The convict Hartwell was discharged some time since, and, as we are informed, is now a resident of Arizona. In what the alleged deception consisted we are not informed.

Eleventh—Keeping a convict in a dungeon for sixteen months.

The facts of this case, as presented before us, do not justify the charge as against Warden Ames, or the former administration of the prison. About three of the sixteen months mentioned in this charge occurred during the administration of Warden Ames. An examination of the facts of the case revealed conclusively that the convict's incarceration was self-imposed. In his own testimony, he admitted this to be the case. He was confined for threats against the life of an officer, but was repeatedly offered his liberty if he would make a promise not to execute his threat; this he declined to do. His incarceration in the dungeon was unavoidable, and was not, in the judgment of your Commission, severe treatment. The dungeon referred to in this case is not what its name implies.

Twelfth—Keeping a convict in a dungeon until he became a maniac.

This charge originated with a report that a Chinaman was placed in the dungeon until he became insane. It appears that, for an attempted escape, the Chinaman was incarcerated in solitary confinement as a means of punishment. His keeper suspected the existence of insanity, and reported to the physician. The physician, Dr. Cary, made an examination of the case, and on the second day, decided the prisoner to be insane. Upon the report of the physician to the Warden, the prisoner was released.

Thirteenth—Refusal to heed remonstrances of the Governor concerning habits of intemperance.

There is no evidence before us that there existed, at any time, occasion for remonstrances. The testimony of your Excellency concerning this matter need not be refreshed in your mind.

Mr. J. J. Owen, editor of the San Jose Mercury, with commendable manliness, appeared personally, and conducted the case for the prosecution with skill and ability.

SOME IRREGULARITIES.

Concerning the general management of the prison, a large amount of information was conveyed to us, alleging the existence of various irregularities. After due examination, we have failed to find evidences of the truth of these allegations. Many of these charges were founded upon unauthenticated rumor, and some of them bear upon their face evidences of mere suspicion. Some of the matters presented

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to us were unintelligible, and no proper understanding of the character of the charges sought to be made could be had.

Among the matters presented for our consideration was one relating to the construction of a yacht for the use of certain officers of the prison. The charge, as presented, was to the effect that the material used in the building of the yacht was the property of the State, and had been taken without a proper accounting of its value; also, that the labor employed in the construction of the yacht was convict labor, and such labor had been so used without compensation to the State.

We find, upon examination into the facts of this case, that the material used in the construction of the yacht was not the property of the State, except as to pine flooring of the value of about eleven dollars and fifty cents, and that the convict labor employed was of inconsiderable value, being the labor of convicts who were working out their over-time. The boat was the property of F. G. Berry, the Commissary of the prison, and J. V. Ellis, the Clerk. Mr. Berry claimed as an offset to the value of the lumber taken, the use on the part of the prison of some spars of indefinite value, but, as claimed by Mr. Berry, of equivalent value to the lumber used. The amount involved in this transaction is not large, and the only criticism which arises upon it is the manner in which the exchange of equivalents was made. No record of this transaction appears on the books of the prison. Inconsiderable as this transaction appears, it is at variance with correct business methods.

PURCHASE AND SALE BY THE WARDEN.

Evidence was presented of the manufacture of a water-wheel by prison labor. An examination into this matter proves the statement to be correct. A water-wheel was manufactured in the prison, and the material used in its construction belonged to the State. The amount of this material was ascertained to be about 1,800 feet of pine lumber, and 900 feet of surface lumber. This wheel was manufactured for a mill located on Half Moon Bay, of which Warden Ames is one of the proprietors. As an offset to the value of the lumber and material used in the construction of this wheel, Warden Ames testified that shortly after last harvest season forage, which came to him as a part of the rents and profits of certain lands owned by himself, was placed on storage at San Quentin; that owing to the non-arrival of forage under contract for the use of the prison, this forage was consumed in the stables by stock belonging to the State. Warden Ames testified that no account of the lumber or material used in the construction of the wheel had been kept, and no charge had been made against the State for the forage used belonging to himself. The circumstances under which the forage was used, as detailed by Warden Ames, were as follows: The contractor under obligation to supply forage to the prison had made the shipment in due time, but all vessels upon which the shipment had been made were becalmed for over two weeks. In the meantime the supply of forage in the prison was exhausted, and that belonging to Ames was used by those in charge of the stables without his knowledge. The irregularity to be noted in this transaction is: that no record of it appears on the books of the prison.

The law plainly prohibits any officer of the prison from being or becoming interested in any contract for supplies furnished to the

prison. It further declares that all purchases shall be made of bona fide dealers in the articles purchased. Legally, Warden Ames could not have purchased the lumber or sold the forage; yet, as the unclosed transaction stands, he did both. Considered from the standpoint of the sums involved in this loose proceeding in the exchange of commodities, the transaction appears almost trivial, but having due regard for the principle underlying this method of discharging a public trust, the transaction is indefensible.

STATE GROCERY STORES.

The commissaries at both prisons continue the practice of selling groceries to residents in the vicinity of the prisons, as well as to contractors and free men employed in and about the prisons. The proceeds of these sales are accounted for to the State. The profit arising upon such sales is not by any means an equivalent for the general irregularity of the transaction. The custom is a legacy from all former administrations, but the custom has no status in law, and should be abandoned. The law authorizes the purchase of supplies for the use of the prisons, but does not authorize the commissaries to sell the supplies thus purchased to private citizens. The transactions arising out of these sales complicate the accounts of the commissaries, and in any case of misappropriation would become a convenient device of concealment. There is, to our minds, no adequate reason for converting the commissary departments of the prisons into State groceries.

PURCHASES BY OFFICERS.

Some reference has already been made to presents of articles manufactured in the prison having been offered to Directors of the prison. We do not find the facts to warrant the conclusion that such presents were offered with any corrupt intent; nor do we find any instance where such presents were accepted. But the products of the prison should not in any case be purchased by an officer. The policy underlying the prohibition against any officer being interested in any contract would forbid him being a party to any contract for work done in the prison. Equally in both cases he would be contracting with himself.

PURCHASES BY DIRECTORS.

It was in evidence before us that some of the Directors of the prisons had purchased various articles of prison manufacture. The price of these articles was determined by the cost of the material used and the minimum rate of prison labor. We find the articles to have been paid for in due time. But the Directors are officers of the prison, and should hold no commerce with it. Primarily they have control of the industrial interests of the prison, and hence there is a sense in which, by making these purchases, they contract with themselves. We regard these transactions as devoid of all elements of system, and therefore irregular. The productive industry of the prison should proceed according to some well defined and regularly authorized principle of commercial action. The wares and merchandise produced should be placed in salesrooms; scales of prices should be established, and at such prices sold to any purchaser. Under such conditions the industries of the prison would become systematized.

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Under various heads we have had occasion to allude to the imperfect condition of the records. The law makes it the duty of the Directors "to enter on their journals the result of all examinations and all other official acts, which shall be signed by all the members present." Throughout the entire investigation official acts were brought to light of which no trace could be found in the records. The custom of the Board has been to proceed with business and adjourn without reading or certifying to the journal. The accuracy of the record thus kept was trusted to memory. A month later the records were read and approved. The journals have not been kept according to the requirements of the law. The history of the management cannot be traced by them. The proceedings of the Board appear to have been conversational rather than parliamentary, and therefore not easily reducible to record as determined action.

THE SALE OF INTOXICATING LIQUORS.

It is a custom of long standing at San Quentin to permit prisoners whose terms of sentence are nearing their expiration certain privileges in the nature of a probationary freedom. The length of this state is determined by the length of sentence served. The prisoner is allowed five days for each year of service. A prisoner having served two years is allowed this probationary freedom for the last ten days of his term. He is allowed to pass outside of the guard line, and other privileges in kind. He is, however, required to occupy his cell at night. There are nearly always one or more prisoners in this relation. An instance was brought to our attention through the testimony of witnesses, where one of these prisoners contracted a saloon bill of twenty-three dollars. A remittance from friends of the prisoner was sent to the clerk, in the form of a draft, in the sum of sixty dollars. The saloon keeper notified the clerk of his claim against the prisoner. The claim was settled in the presence of the clerk of the prison, and therefore that officer had personal cognizance of it. The amount of the saloon bill and other circumstances surrounding the transaction, raises a strong presumption that the convict had been supplying his fellow-prisoners with liquors. There are three saloons within a short distance of the prison, one of which is near the guard-line gate.

Section 13,172 of the Penal Code provides that "every person who, within two miles of the land belonging to this State upon which the State Prison is situated, * * * who sells, gives away, or exposes for sale any vinous or alcoholic liquors is guilty of a misdemeanor." The prison authorities have permitted the open, flagrant, and daily violation of this law without protest.

The custom of allowing the probationary freedom above alluded to is without the warrant of law or established rule of discipline.

GENERAL AND COMPARATIVE REVIEW.

We have been requested by your Excellency to examine other penal systems with a view to comparison, and to suggest any reforms

and improvements which may seem to us desirable. The performance of this task involves a somewhat comprehensive examination of the progress of penal science, but such a review is indispensable to a right comprehension of the difficulties which have obstructed the path of reform, of the mistakes which have been committed through imperfect apprehension of the nature of the problems to be solved, and of the principles which experience has shown to be the only safe guides in penal administration.

THE GENESIS OF REFORM.

Little more than a century has passed since the beginnings of penal reform in Europe were made. Up to that time there had been no thought of the reformation of convicts, neither had it occurred to any one that their labor might be utilized while in prison. Transportation had indeed been practiced for a considerable period, but it was in effect the selling of convicts into slavery, and both in theory and practice represented a barbarous era. Prisons were employed as places of detention, and the worst abuses were carried on in them. The labors of Howard brought these abuses to public attention, and subsequently the exertions of Bentham, Romilly, Beccaria, and others, forwarded and kept alive the good work, and gradually created a more enlightened view of the relations of the State to the criminal. But while nothing could have been worse than the state of the European prisons which John Howard described, the first tendency of the reform spirit was to rush into an opposite extreme. There had been no discipline of any kind previously. Henceforth there should be nothing but discipline. The philosophers threw themselves with ardor into the discussion of the convict question. Jeremy Bentham devised a wonderful and most elaborate model prison, which he called the Panopticon. This was to be constructed in star form, the radii surrounding a central building called the Argus, from which wardens were to inspect every motion of the prisoners in the wings through concealed places of observation. The whole scheme was perfectly machine-like in its regularity and order, but it was never carried out, and has been condemned as impracticable, though many of Bentham's ideas have since been availed of in the construction of other systems.

This tendency to rigid and complete supervision of the convict, however, was the most marked characteristic of the early reform movement. It was apparent that the promiscuous herdings of the old prisons, with their absence of employment, their lack of classification, their want of order and discipline, had produced the worst consequences, and it was argued that the removal of all these conditions was the first thing to be done. Unfortunately the majority of the conclusions reached in these early discussions were based upon wholly mistaken ideals of the criminal temperament, and fallacious notions of the methods of changing bad citizens into good men. In the United States, the theory of separate silent imprisonment was tested fully before the English penologists had advanced so far. This system, known as the Pennsylvania system, consists in absolute seclusion and isolation. The convict never leaves his cell. He works, eats, and sleeps there. He never sees another convict. He never converses with any persons but officers of the prison and visitors. Evidently this system was an effectual antidote to the former promis-

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cuity. It was impossible that a prison conducted upon it could breed criminals. This was tried, but there were unforeseen obstacles to the success of the system, and the most serious was the fact that the convicts who had been subjected to it for some time had a tendency to become insane. The solitude, the isolation, affected their minds, and the number of lapses into madness became so great that the solitary system was abandoned in all the prisons but those of Pennsylvania, where it is still maintained, despite the almost universal condemnation it has received from the most experienced penologists.

FIRST FAILURES.

Naturally a failure of this kind suggested modifications of the original plan, and then what is called the silent associate system was devised. Under this method the convicts occupy separate cells at night, and work together during the day, but in silence. In practice it is well understood that this silence cannot be at all thoroughly enforced. The social instinct in humanity is most exigent, and men will resort to every imaginable device to procure communication with one another. It has, therefore, been found that wherever association, under any form, is part of the system, conversation will be carried on between the prisoners more or less. The obviously unnatural character of the prohibition of all social intercourse, as indicated by the unconquerable tendencies of the convicts to break the rules, ought to have convinced the framers of the plan that they had made a mistake; but this they did not perceive until the system had virtually broken down at the point indicated. The cellular or separate system was tried in England, at the Pentonville Prison, and for a time at the Millbank Penitentiary. The silent associate system was tried at the latter prison, and under peculiar conditions. At that time it was believed quite generally that reformation of the criminal could only be accomplished by giving him what was called "a change of heart," and that this change of heart could only be brought about by the spiritual exertions of the chaplain. Thus far there had been no idea of making industry the agent of reform. The convicts were for the most part without employment; they occupied their cells in idleness; they were well fed; and it was hoped that by supplying them with a liberal supply of religious aid and consolation they would be regenerated and reformed. This theory was given, at Millbank, the fullest and fairest test conceivable. In that prison the offices of Governor and Chaplain were merged, and combined in the person of a clergyman. He was an enthusiast, and every part of the system was at once made to accord with his religious theories. The experiment was extended over several years, and it was so complete and utter a failure that the Government had to interfere and reorganize the prison system altogether. The Rev. Mr. Nihil began with methods which produced, first, hypocrisy; second, insubordination. Striving to protect himself from the bad results of his own pet theories, he gradually introduced more and more stringent isolation, until at last the rapid increase of insanity among the prisoners convinced the Government that this state of things must be put an end to.

As germane to the subject we here introduce a citation from the "Memorials of Millbank," written by Captain Griffith, Deputy Governor of the prison. He says: "The general tone of public opinion at that time turned towards intrusting the ministers of religion with

full power to preach prisoners out of their evil courses into honesty and the right path. Far be it from us to detract from the efforts made in such a cause. The work of good and earnest men, who seek to benefit their fellows, can never be barren altogether of results. But it is greatly to be feared—and I take it that this conclusion is pretty generally accepted to-day—that it is merely a waste of time to endeavor to reform habitual criminals by purely moral and religious means. Those who, from long experience, know the dangerous classes well, affirm that such conversion, by any means whatever, is quite out of the question." Mr. Elam Lynds, the well known Governor of Sing Sing Prison, told M. de Tocqueville that he did not believe in complete reform except in the case of young offenders. "In my opinion," he says, "nothing is more rare than to see a criminal of advanced age become a virtuous and religious man. I put no faith in the holiness of those who leave prison; and I do not believe that the Chaplain's counsels, nor the prisoner's meditations, will ever make of him a good Christian. Not only are these methods wholly inefficacious, but they tend often in the opposite direction. They are apt to be misunderstood. The objects of so much tender solicitude are apt to take the kindness that is well meant for weakness, and are, in consequence, violent and unmanageable. Of the painful failure of all attempts at reformation by these means we have now abundant proof. For years the medicine has been tried; generation after generation has been subjected to its healing powers. Is crime eradicated, or even sensibly diminished thereby? Vaccination cured smallpox; sanitary precautions judiciously enforced will ere long contend successfully with epidemic diseases; but have prayer and preaching effected the cure, wholesale or partial, of the evils they were expected to touch? Not at all. The reformation attained, save in the rarest instances, has been but temporary in character, skin deep, while below the thick layer of cant and hypocrisy which overspreads with rapid, fungus-like growth the surface of the heart, there rankles still the cancerous sore in all its malignity."

This is the testimony of a veteran penologist, who has had ample opportunity of observing the real effects of the influence he discusses. Mr. Henry Mayhew, in his work on the "Criminal Prisons of London," takes a very similar view. It appears that the Chaplain of Pentonville Prison, the Rev. Mr. Kingsmill, had been forced to the same conclusion reached by the Rev. Mr. Platt, of San Francisco, namely, that the reformation of the criminal could only be accomplished by a "spiritual miracle." The Pentonville Chaplain observed; "No human punishment has ever reformed a man from habits of theft to a life of honesty— of sin to virtue; nor can any mode of treating prisoners, as yet thought of, however specious, accomplish anything of the kind. Good principles and good motives are the real wants of criminals. God alone can give them by His Spirit; and the appointed means for this, primarily, is the teaching of His word." In answer to this Mr. Mayhew observes: "It is admitted by every one that these same conversions are miracles wrought by the grace of God; and we do not hesitate to declare our opinion that it is not wise, nor is it even religious (betraying as it does an utter infidelity in those natural laws which are as sacred institutions of the Almighty as were the scriptural commandments themselves) to frame schemes for the reformation of criminals which depend upon miraculous interference for their success. To put faith in the supernatural, and to trust to

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that for our guide in natural things, is simply superstition; and surely the enlightened philosophy of the present day should teach us that, in acting conformably with natural laws, we are following out God's decrees far more reverently than by reasoning upon supernatural phenomena." Mr. Mayhew, indeed, denies that "the majority of individuals who abstain from thieving are led to prefer honest to dishonest practices from purely religious motives." He argues that self-interest is the mainspring of all human action, and that the only way to reform criminals is to convince them that "honesty is the best policy," in the most literal sense of the term. The fact, however, of supreme importance is, that what Captain Griffiths calls the "Chaplain's Reign," at Millbank Penitentiary, was a complete failure; and that the methods employed by him were utterly discredited. It does not of necessity follow that religious instruction in prisons is without value. We desire to make no such inference. But it is necessary to point out that so far as practical experience goes, the conclusion is unavoidable that criminal reformation, to be effective, must be based upon far other influences and principles.

Knowledge in these matters has been purchased at a very costly rate, and through tedious experiment. When penal reform was first agitated the idea of classification naturally suggested itself, and it was proposed to separate criminals according to age, sex, character of offense, and general reputation. This done it was thought that everything had been done, but it was soon made evident that no such classification was of the least practical value. It was seen to be impossible so to separate the criminals in accordance with these standards as to create really analogous and uniform classes. Those who were young in years might be much more advanced in crime than their elders. Those who were in for one crime might really belong to quite a different category of law breakers. Thus the burglar might commit a manslaughter; the pickpocket might commit a burglary; the sneak-thief might turn pickpocket, and so forth. Arbitrary classification resulted only in confusion worse confounded, and after a full trial it was found necessary to abandon that system. All this time new truths had been slowly evolving, however, and by painful degrees it was being realized that, in order to treat the convict successfully, it was necessary to recognize not only his human nature but his individuality.

THE GROWTH OF KNOWLEDGE.

On the proposition that reform of criminals was necessary there was little difference. It was perceived that while the safety of society was the first requirement of punishment, the restriction and diminution of crime required the utmost efforts to be made to turn criminals from their evil ways. As to how this should be done there was great diversity of opinion. For a long time, as we have shown, the religious hypothesis was entertained, and though it cannot be said that any practical effects have ever resulted from it, it has held a place in every system of penal reform up to the present time. It was not until Captain Maconochie and Sir Walter Crofton in England, Obermair in Germany, Montesinos in Spain, and Lucas in France, had worked out their schemes of reform through the agency of the convict himself, that what may be termed the scientific view of penal administration began to be entertained. In order to comprehend

these methods thoroughly it will be necessary to inquire what constitutes a criminal. The mediæval idea, as we may term that ecclesiastical view which was tested with such disastrous results at Milbank, was that every convict was degraded in his own eyes; that he was as odious to himself as he appeared to others; that he recognized the justice of his punishment; that he held the same fundamental concepts as the Chaplain, regarding things temporal and eternal; and that he could, therefore, be made to perceive his iniquity clearly, and to embrace a religious mode of thought and action. Evidently, as Mr. Mayhew has shown, this view was not based upon any analogy in society outside the prison. For it is very certain that free men do not act upon such motives, nor do they contemn and despise themselves when they have done things which, though not illegal, may nevertheless be flagrantly immoral, and even more detestable than breaches of the law. It was, in fact, a completely theoretic and unreal aspect of human motives and actions, and, therefore, it could not produce the effects sought by it.

Mr. Pike, in his "History of Crime in England," gives a far more rational and realistic sketch of the criminal character, and one which accords with modern experience and research. He says:

> The criminal has, and always has had, ideas of right and wrong, but he differs from his fellow countrymen in the signification which he attaches to the words. He is rarely or never without associates whose ideas of right and wrong are the same as his; he has, therefore, a public opinion which not only supports him in his own views, but would cease to support him if he substituted for them the views of the non-criminal classes. Thus one of the motives which might deter a man who habitually lived within the law has precisely the opposite effect upon a man whose life is a war against society. A criminal of this stamp, with courage and address, cannot, in his own eyes, be doing wrong when he gratifies the love of adventure, which is a part of his nature. He is not responsible for the quick blood which flows in his veins; for his long line of ancestors, all familiar with deeds of violence and cunning; for the circumstances of his childhood which determined the course of his later life. Instinct and his fellows tell him that it is good to be brave; he is brave. They tell him it is good to fleece more honest men; he fleeces as many as he can. They tell him that to obey the laws through fear is to play the part of a coward; he will not play it. They tell him that he is "good game;" he believes it. He is a criminal—a most dangerous and incorrigible criminal—but can it be said that he is a bad man? He has acted as well as he was able, according to the lights he possesses. Can the best of us say more for ourselves? Can a man be depraved who is not depraved in his own eyes?

THE CRIMINAL TEMPERAMENT.

The truth is that criminals, as Mr. Pike observes, constitute a society of their own, in which many of the maxims of law-abiding society are reversed. They virtually are the foes of law-abiding society, but experience shows that they by no means therefore regard themselves as inferior, as disgraced, or as requiring reformation. They therefore frequently resist the well meant efforts of those who seek to persuade them of their fallen state, and they harden themselves against such appeals hopelessly. A fuller understanding of the criminal character is being obtained now, and this throws a great deal of light upon the whole question of penal reform. There are, for example, a great number of habitual criminals. Now it is an ascertained fact that in many instances these habitual criminals are the inheritors of a criminal temperament, and that the predisposition to crime has existed in their families for generations. The most convincing and thorough investigation of this subject of criminal heredity yet made was undertaken by Mr. R. L. Dugdale, of the New York Prison Association, and published under the title "The Jukes," in 1876. Mr. Dug-

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dale was enabled to trace the offspring of two criminals living about seventy-five years ago. He found that in this period the family had produced 1,200 members; that these offshoots had cost the country $1,300,000 in crime, imprisonment, plunder, waste of capital, wages unpaid, etc., not to speak of the contamination which they spread around them, and their indirect malign influence upon society. Throughout this period of seventy-five years the tendencies of all the members of the "Jukes" family were toward lawless ways, disease, and crime. Nearly all the women became harlots, and had illegitimate children. Nearly all the men became thieves, or burglars, or receivers of stolen property. But these are not the only exhibits made in the course of this exhaustive analysis of Mr. Dugdale's. He shows that among habitual and hereditary criminals the tendency towards disease is quite as marked as that towards crime. The children of debauch and lawlessness are feeble of brain and of nervous system. They inherit an instability of character which renders them incapable of sustained exertion. The nomadic instinct is in their blood. They have a constitutional distate for steady industry, and a constitutional inability to intellectual elevation. They are born breakers of conventions, but in them it is made apparent that the tendency to rebel against conventions, though usually ascribed to a progressive spirit, may be the result of race deterioration. The hereditary criminal is a declining creature. He is a proof that degeneration is possible as well as civilization. And in proportion to the strength and number of his inherited aptitudes he is of necessity the more difficult to deal with.

THE MARK SYSTEM.

As we proceed with this review, however, we shall perceive that the teachings of experience gradually come into accord with the most thorough deductions of reason; or as Herbert Spencer puts it, "the methods which have succeeded so marvelously in decreasing criminality, are the methods which most nearly fulfill the requirements of abstract justice." All efforts to reform the convict by external influences may be said to have failed completely. No doubt there was a great deal of hypocritical cant on the part of prisoners who fully understood that their best policy was to stand well with the Chaplain; but the statistics of crime not only failed to show any diminution in offenses, but on the contrary, demonstrated that the number of recommittals was increasing. The theory of spiritual reformation had broken down, and the theory of severe punishment had been equally futile. The infliction of purely coercive labor did not have the effect of convincing the convicts that labor was pleasant. On the contrary, it imbued them with a deeper hatred of industry. There was no motive to reform in any of the elaborate systems which had been devised with so much enthusiasm. It is true that much has been claimed for the cellular system, and perhaps it may be true that the men who had gone through separate imprisonment under that system were not often recommitted. But it is the opinion of experienced penologists that the cellular system so weakens the mind of the prisoner as to make him no longer capable of pursuing avocations which require a keen and prompt judgment, and that this is the real explanation of the alleged superiority of that system. The presumption certainly is against that method.

The world owes to Captain Maconochie and Walter Crofton the discovery and practical application of the most effective and thoroughly scientific penal system yet devised. This is what is now known as the "mark" system. It rests upon the theory that no reform can be of any value which does not consist in the steady and continuous building up of good habits on the part of the prisoners. Under the "mark" system the convict is made to earn his own promotion to greater privileges and comforts, and he is also permitted to lessen the term of his imprisonment; but he must perform definite amounts of work before he earns his marks, and he is not allowed them merely for the negative qualification of abstaining from misconduct. It is to be observed that the Goodwin Act, in this State, has in operation been completely divested of its reformatory capacity by the indiscriminate application of its provisions. If a prisoner is not refractory, he is allowed his marks. Thus nothing is required of him, but the State gratuitously, and without any reason whatever, presents him with so much of his sentence. This application of a mark system can have no other effect than to shorten, without justification, the sentences of the Courts; and as a proof that this fact is fully understood by the Courts, we may refer to the fact ascertained by us in the course of this inquiry, that since the passage of the Goodwin Act the average length of sentences to the State Prison has increased so as to practically cover the curtailments accomplished by the law.

The "mark" system as originally devised, and as now in operation in all the convict prisons of England, and in those of France and Germany, as well as in the Elmira Reformatory in New York State, consists of three stages. The first is strictly penal. The convict is on his entrance into the prison put under the cellular system. He is confined to his cell, at first without any means of occupation. Neither books, papers, nor work is allowed him. Some convicts at first think they can stand this idleness during the whole of their sentence, but they soon discover their mistake. The truth is that this separate confinement is extremely severe punishment, and as it is accompanied by low diet, it has its full effect. The prisoner speedily longs for employment of any kind, and when he asks for it it is supplied to him, but still in the cell. The usual limit of cellular imprisonment is nine months. It has been found that this is quite as much as the convict can stand without injury to his brain. While in his cell he is made to understand thoroughly the principles upon which his next stage, the probationary, is to be controlled. When he passes into this second stage he realizes that everything depends upon his own industry and good conduct. He can secure a maximum of eight marks a day, and the minimum is six. But he must earn every mark before he is credited with them. Practical results are of course the best criterions in matters of this kind, and therefore we will cite Captain Griffiths again on the actual effects of the mark system: "It has been said that no man will try his best who is forced to work. This was one of the old arguments against the system of assignment, as tending to show that the convict servants were nearly valueless. But by the mark system, over and above the ordinary stimulus given to industry, there is the still greater inducement to show skill, aptitude, and intelligence; for it being the convict's great aim and object to gain marks, it follows also that it is his desire to gain them as easily as he can. Hence he realizes readily the privilege of being raised

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above the level of the unskilled laborers around him, who are committed to a regular routine of only the same monotonous and irksome toil. Hence also, if he knows a trade or handicraft, he grasps eagerly at any chance of being allowed to follow it; and if actually so selected, he is careful to put forth his best abilities for fear of relegation to the severe labor from which he has but just escaped. In the same way those who know no trade are disposed to give their best endeavors to learn one; and, without exception, all who are still in the heavy 'gangs' will labor on with alacrity, hoping thereby to establish some sort of claim to pass on afterward to lighter and more agreeable work. The impetus thus given to intelligent industry and to cheerful alacrity only those who are in daily observation of it can fully appreciate." We may add that it is claimed by other experienced observers that the convicts under the mark system accomplish more than the same number of free workmen could do. It is perhaps unnecessary to say that no such experience has ever been had of convict labor under the contract or lease system, or under the forced labor system. Volunteer work, done under the stimulus of hope, and in furtherance of the one end which the workers prize most highly, can alone produce such results.

The third stage in the mark system is that of conditional liberty, practically the so-called "ticket-of-leave" system. This stage has not been thoroughly worked out. It is found in practice that it is very difficult to exercise any effectual supervision over the conditional convicts, especially in large cities, but some new regulations are about to be tested which it is believed will obviate the chief difficulties of the case. In Ireland, where the Crofton system has been in operation for over twenty-five years, the most satisfactory results are claimed for it. There another stage is interpolated, where the convict is tested as to his ability to resist temptation, by being put on a sort of farm where he works in the open air; where there are no walls nor guards; and where there is practically no means of preventing his escape. Dr. Wines, in his work on the "State Prisons," says that in twenty years there have not been twenty escapes from this probationary establishment, and it must be admitted that this is very strong testimony to the success of the reformation of the convicts who are able to control themselves so effectually.

PROGRESSIVE CLASSIFICATION.

It will be observed that in the "mark" system the principle of progressive classification is applied. This is the one only scientific plan of classification. It is simple and effective. No attention is paid to age, nature of crime, number of convictions, or any of the old landmarks. The convict classifies himself by his own behavior. He has it in his power to take the highest rank at first, and to keep it. Everything depends upon his personal disposition. The result is that there can be no mistakes or embarrassments in classification, but that the men who are really making the most progress take the first rank. The whole mark system proceeds upon the same principle. The convict is made the arbiter of his own fate, measurably. And the chief excellence of the system consists in this, that it fosters and maintains in the prisoner those habits of industry, of self-control, and of perseverance, which are precisely the best aids to permanent reformation. It may be objected to the system that it only keeps up the habits of

industry until the desired aim—namely, freedom—has been gained; but in fact it implants those habits in the character, and unconsciously to the convict equips him with tendencies all of which must operate strongly against any future backsliding inclinations. In England the county jails have lately been transferred to the imperial jurisdiction; and the system described will, it is understood, be introduced into them as well as into the convict prisons. It is one of its advantages that it can be applied to any kind of penal or correctional institutions, and that it is certain to have equally good results, no matter where applied.

In all the old penal systems the fundamental error was committed of making the prison life as different as possible from the social life. The military system, which has unfortunately been so tenacious, and of which we have adumbrations in our own crude and barbarous prison methods, was distinctly hostile to the development of individual independence and self-control among the prisoners. All it could do was to convert them into a machine. It could drill them, and make them execute all movements with automatic precision, but it was perfectly futile in preparing them for an honest life when they were discharged. The real requirement was a system which should take each convict separately, and give him strength and firm principles to rely upon. The military system never could do anything but weaken the self-reliance of the convicts and make them more helpless and infirm of purpose. It did that, and therefore, while it alternated with the reign of the Chaplain, there was very little reduction in the amount of crime. Now, however, the military methods are discredited, and though not yet abandoned in this country, it is being realized more clearly every year that they are not only useless, but mischievous.

POLITICS VS. PENOLOGY.

Whoever undertakes, as we have done, an examination of this great and complex question, must experience surprise, and probably perplexity, on finding, that though penal science appears to have made more progress at an earlier point in some of the United States than almost anywhere in Europe, yet it has halted lamentably of late years, whereas the Old World has in the same period been advancing with giant strides. We have, it is true, advanced penologists, and the reports of our Prison Congresses and our National Prison Association, and kindred societies, have been full of the most useful information, and the most interesting discussions. But when we examine the actual progress made in the various State Prisons, we are compelled to realize that there is everywhere an intangible obstruction to the free development of reform principles; that no matter how sound and thorough the propositions of the penologists, something interferes to prevent the application of their views. The promise, in fact, has far outstripped the performance in nearly every State of the Union; and while England, and France, and Germany, and Italy, and even Spain, are evolving scientific and effective penal systems, and actually reducing the percentage of crime in their respective territories, the United States are at once showing all the world what to do, and refraining from following the advice of their own penologists. The cause of this anomalous condition of things is not far to seek. It is the baneful and paralyzing influence of partisan politics upon the whole question of prison administration.

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Dr. Wines, in his "State of Prisons," observes: "The two master forces which have heretofore opposed and still oppose the progress of prison discipline and reform in our country are political influence and instability of administration, which stand to each other in the relation of cause and effect. In a majority of States the prisons form a part of the political machinery of the State. The interest of politicians has mainly controlled their management; while the interest of the people and that of the prisoners, which are really the same, have been practically ignored. With every turn of the political wheel there is a clean sweep of the officers in charge—the adherents of the defeated party marching out and those of the victorious party marching in to fill their places. The prison systems of the Old World are not burdened with this weight, nor impeded with this obstruction; nor is there anything so incomprehensible to gentlemen connected with prison affairs in those countries as this state of affairs among us. Under such a system—that is to say, a system of political appointments—the whole theory of our penal and penitentiary legislation becomes well nigh a nullity; and while inspection may correct isolated abuses, and philanthrophy relieve isolated cases of distress, broad, thorough, systematic, and above all, permanent reform, is impossible. To such reform it is absolutely essential that political control be eliminated from prison administration, and that a character of greater stability be impressed thereon." This is the language of one of the most experienced penologists in the country; of one who had half a century of continuous investigation and observation in the prisons of New York to ripen and mature his judgment, and to give weight to his conclusions. It is also the opinion of all who have given any attention to the subject, and it is most emphatically the opinion of this Commission. There is no other factor in the whole subject of penal administration of equal importance with this. In fact, it forms the foundation of all reform work, and the question whether proposed legislation will or will not produce salutary effects must depend primarily and almost entirely upon the elimination of politics from the prison management. Our investigations have impressed us deeply with the vital consequence of this requirement.

THE LOCAL APPLICATION.

The author we have quoted above, pays a high compliment to the provisions of the new Constitution of California, in regard to the government of the State Prisons. After citing and commenting upon each section of the article referred to, he says: "It is difficult to see how, in a government like ours, prison management could be more effectually removed, on paper, from the domain of party politics. It remains only that the execution be carried out in the spirit of the theory, with intelligence and vigor." Dr. Wines intends no irony in these words. He innocently supposed that the provisions of the Constitution would be carried out in the spirit of their conception; but his comment is nevertheless rendered bitterly satirical by the facts themselves; for it is the duty of this Commission to report to your Excellency, that in the administration of the State Prisons of California, politics still have sway, and that if the intention of the framers of the new Constitution was to eliminate that influence from penal affairs, this intention has been disregarded and set aside altogether in the application of the Constitution and the laws made under it.

In the first place, though the Constitution afforded free scope to the Board of Prison Directors, for the selection, as Wardens, of men trained in penology, and though it was thoroughly understood by all intelligent men that no permanent or stable reform could be introduced without the guidance and direction of such experience and special preparation, the Board chose, for these positions, men who were suggested in no way by any experience in their past lives, or by any inquiries into or knowledge of the functions they were called upon to perform. Thus the first principles of penal reform were deliberately violated at the very threshold of the new administration, and what followed was still more flagrantly at variance with all reform requirements. The partisan spirit which governed the situation has been disclosed very clearly in the course of this inquiry.

It is on record that soon after the change of administration took place, no less than fifty-eight of the guards of San Quentin were discharged or "permitted to resign." Inquiry developed the fact that these were all Democrats, and though some attempts were made by witnesses to break the force of the revelation by evasive and ambiguous statements, no doubt was left on the minds of your Commissioners that the whole transaction had been in strict conformity with the most simple and best understood rules of that "spoils system" which demands a complete clearance of the officeholders of the defeated party, at every election. Nor have we been able to discover a single instance of the existence of any higher or broader views of penal administration than the "spoils system" supplies, in the course of our inquiry. We have encountered several cases in which political influence was appealed to successfully to furnish men with offices in the State Prisons. We have met with abundant evidence to the effect that those who possessed that political influence regarded the prisons as convenient agencies for the discharge of political obligations and the gratification of personal friendships. But we have failed to discover a solitary instance tending to show that there was anywhere a conviction that special fitness was required in prison administration. Even a physician was appointed because some influential politicians had known him many years, and not at all because he possessed a high reputation. As usual in such cases, in fact, the rules which guide business men in all their transactions, and which are based upon a wise regard for the interests concerned, have been ignored. Politicians, not penologists, have been appointed to all the offices. The question whether an applicant was a Republican or a Democrat has been far more important apparently, than the question whether he possessed any special fitness for the work he was to perform. The whole prison administration has been thrust back into the political groove, and every purpose of reform indicated in the new Constitution has been stifled and aborted.

It is impossible that any reformatory system should be introduced to the State Prisons while this paralyzing political influence is permitted to control the administration. It is, however, equally clear, that if the plain letter, as well as spirit of the Constitution, can be ignored and violated, the mandates of the organic law are useless to remove abuses or to promote reform. We have here a case in which, after a painstaking effort had been made to do away with political influence in prison administration, and after a new Constitution had

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been so framed in this regard as to place California, in the opinion of a disinterested and competent observer, "in the foreground of all States on the North American continent in the matter of prison reform," the old partisan spirit reasserted itself, and violently prevented the projected reforms by thrusting all the new principles into the background, and rudely substituting for them the time-dishonored rules of the "machine." What the State Prisons might have become under the faithful and intelligent application of the provisions of the new Constitution, it has not been permitted this community to realize; for the Constitution has been disobeyed in the management of these institutions systematically, and the methods which obtain in them to-day are precisely those which the framers of that instrument were most resolutely bent upon eliminating.

NEED OF TRAINED OFFICERS.

We have heretofore spoken of the need of trained officers in the administration of prisons. This is a conclusion which has been reached unanimously by all authorities on penal science, and which has been repeatedly indorsed by Prison Congresses. One of the most important of these assemblages, namely the Prison Congress of London, had submitted to it by the American delegation, and substantially embodied in its final resolutions, the following declaration on this head. "The task of changing bad men into good ones is not one to be confided to the first-comers. It is a serious charge, demanding thorough preparation, entire self-devotion, a calm and cautious judgment, great firmness of purpose and steadiness of action, a keen insight into the springs of human conduct, large experience, a true sympathy, and morality above suspicion. Prison officers, therefore, need a special education for their work, as men do for the other great callings of society. Prison administration should be raised to the dignity of a profession. Prison officers should be organized in a gradation of rank, responsibility, emolument; so that persons entering the service in early life, and forming a class or profession by themselves, may be thoroughly trained in all their duties—rising in successive position till, according to their merits tested chiefly by the small proportions of re-conviction, they reach the position of governors of the largest prisons. Thus alone can the multiplied details of prison discipline be perfected and uniformity in its application be attained. For only when the administration of public punishment is made a profession will it become scientific, uniform, and successful in the highest degree."

In Germany and some other countries, normal schools have been established for the training of prison officers, and these specially trained officers are sent to the reformatories in the first instance, on the principle so wisely applied in what is called the Quincy School system, that the youngest students need the largest skill in tuition. The results of training officers especially for this work have been uniformly satisfactory, as was to have been expected. It is indeed very evident that if prisons are to be anything more than places of detention, it is necessary that their officers, from the highest to the lowest, should possess special fitness for the duties they discharge. It is not less apparent that the spoils-system method of appointing prison officers is as bad as it can possibly be; that the men taken haphazard from the ranks of party politics for these offices are far

more likely to be unfit than fit; that even where they are not particularly objectionable by means of general ignorance, or bad habits or temper, they are of necessity wholly unfamiliar with the peculiar work to be done; that in fact they are fit for nothing but to keep up that unintelligent and stagnant system of treating criminals which consists in surrounding them with a high and thick wall, and stationing sentries at intervals to shoot them if they try to escape. This, practically, is all that the ordinary political appointees are capable of, and it follows therefore, that their incompetence tends to complete a vicious circle by perpetuating the futile and barbarous system which the method of their appointment has established.

CONVICT LABOR.

In the case of the California prisons, moreover, the mischievous consequences of the "spoils" system are greatly reinforced by the changes made in the organic law. This would not have been the case had that law been faithfully carried into effect; but one of the results of its violation is to attach disastrous consequences to that provision in it which, under an enlightened and progressive administration, might be expected to yield favorable results. We refer to the provision abolishing the contract system of prison labor. Before proceeding to the local application of this question, however, it will be proper to speak of the general tendencies in regard to the employment of prison labor. We have shown that all experience demonstrates industry to be the main reliance in any effectual system of criminal reform. The convict must be first plunged into adversity, represented by cellular confinement. And then he must be made to extricate himself by his unassisted exertions. The virtue of this method lies in its close resemblance to natural processes. The purpose is to make the convict pass through just such straits and trials as every man has to face in the open struggle of life. He is in trouble, and is first made to realize that he has brought it on himself. Then he is shown how he can work out of it, and in this process of working out he develops those habits of industry and self-reliance which must, if anything can, effect his permanent reform.

THE VARIOUS LABOR SYSTEMS.

The question of the necessity of labor being conceded, the kind of labor has to be considered. Three systems of employing convicts in the United States have been tried, namely: that of State management, that of contracts, and that of leases. State management is the method decided upon in this State by the adoption of the new Constitution. The contract system is that which has obtained here in the past. The lease system consists in the letting out of the whole prison to private individuals, who guard, feed, clothe, and work the convicts, paying rent to the State. This last system has been rarely resorted to, and never with other than unsatisfactory results. The objections to the contract system are many and cogent. It is utterly incompatible with any reformatory system. The contractor is a person who has but one concern with the convicts, and that is to make as much profit as possible out of them. He has nothing in common with the administration. He is an element of trouble, of demoralization, and

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of confusion, when he is nothing worse. But in many States of the Union, the contractors have practically governed the State Prisons. They have exercised a political influence superior to that of the Wardens and Directors. They have punished their enemies and rewarded their friends, not only among the officers, but even among the convicts. Dr. Wines says of the contract system, that its first effect "is to place for the whole working day all the prisoners contracted for, to a great extent under the control of men with no official responsibility; men who see in the convict only so much machinery for making money; men whose only, or at any rate, whose chief recommendation to the positions they hold in the prison, is that they were the highest bidders for the human beings hired by them." A second effect of this system is to introduce into the prisons agents of the contractors, who, for the most part, have not only no interest in aiding reform of the convicts, but are too ready to oppose it, by offering mischievous indulgences to the convicts as an inducement to further industrial efforts. A third effect of the system, Dr. Wines observes—"in former times especially conspicuous in New York—is to set up in the prison a 'power behind the throne greater than the throne;' a power well nigh omnipotent within its sphere; a power that coerces, bribes, and threatens in pursuit of its selfish ends; a power that makes and unmakes officers, imposes and remits punishment through agents whom it has been able to bend to its will, and even stoops to mean devices to get the poor prisoner who has incurred its wrath into straits and difficulties, that its revenge may be gratified by the sight of his punishment." The power of which Dr. Wines here speaks has certainly not been overestimated, if it be true, as General Pilsbury declared, that "there was not a State Prison in New York whose Wardens could not and would not be removed in twenty-four hours if the contractors willed it."

The contract system is wholly adverse to reform, and therefore, when reform is contemplated, it is to be avoided. But it must be distinctly understood that when the spoils system prevails in the appointment of prison officials, even the contract system may be more economical for the State than any other. The management of prison labor by the State officials presupposes fitness on their part to undertake that duty. If they do not possess this fitness it is simply impossible that they can accomplish what is expected of them, and no matter how willing they may be, they are certain to entail great waste and loss upon the State. Now, it is clear that the new Constitution, in providing for the abolition of the contract system at the same time that it provided for the elimination of politics from the prison administration, contemplated the transfer of prison labor to State officials, who should be chosen for their special fitness. But inasmuch as the Constitution has been ignored in the appointment of officers, it follows that the change from the contract system to that of State management argues extravagance, error, and loss, instead of increased economy. There is no instance on record of a State Prison managed as those of California now are, being brought to a self-supporting condition, or even to a condition of moderate expenditure. The teaching of experience is, that wherever politics control penal offices, the labor of the convicts can only be made in any way profitable by adopting the contract system, with all its evils. As Dr. Wines says: "When party politics dominates these administrations, and when, owing to the fluctuations of politics, new and inexperienced men are

so often put in charge of our prisons, it is not to be expected that so vast and complicated a machine as the industries of a large prison should be successfully managed by them." And, as a fact, they never have been successfully managed.

STATE MANAGEMENT.

An important factor in this phase of the subject, however, is the size of the prison, or rather the number of convicts to be employed. Experience has shown that, where reform is intended, the number of prisoners should not exceed four hundred. The same principle applies to the industrial question. In prisons containing four hundred and under, it has been found possible to produce measurably satisfactory results under State management of the labor. In prisons exceeding four hundred—and this includes the seventeen principal penitentiaries in the Union—all attempts to produce economical results have thus far failed. In these large prisons, the best economical results have been attained under the contract system. Of course, it would be a mistake to conclude that this showed the superiority of that system, for, as we have pointed out, there can be no reform where that method prevails; and when there is no reform, the prison exercises no deterrent influence, and consequently is no more than a place of detention, and a failure as concerns its primary purposes. The prison at San Quentin, cannot, so long as it contains its present large number of prisoners, ever be made to produce as good economical results under State management as under the contract system. As, however, the latter has been excluded by the Constitution, it is not necessary to consider it further; as the law now stands, State management alone is possible. To make such management successful, it is absolutely necessary that it should be divorced from politics. So long as the Board of Directors are permitted to treat the Constitution with contempt, and "machine" managers are encouraged to look upon the State prisons as belonging to the catalogue of ordinary "spoils," every appropriation made by the Legislature for the extension of the prison industries is liable to involve a further waste of capital, and a further perversion of energy. It is impossible to assume the fitness of officers politically appointed, for the management of a business demanding the highest commercial education, good mechanical acquirements, a thorough familiarity with economic laws, and in addition, a rare understanding of human nature. Whoever thinks it possible to obtain these qualifications through the lottery of partisan politics, is capable of believing that a Professor of mathematics, or of Greek, could be chosen by a primary election, or that a caucus could confer upon its nominees the capacity to perform surgical operations of the most delicate character.

A great deal of prominence has been given to the question of making prisons self-supporting. But there is much fallacy in the arguments commonly used in this connection. The only real test of the success of penal administration is the diminution of crime. It is undoubtedly possible to make a prison self-supporting. If all other considerations are subordinated to that one it can be accomplished. But the result will be the sacrifice of reform, and the consequent perversion of the prison machinery from its legitimate and most important uses. And though the reports of such a prison may seem on their face to show that the State is conducting that part of its business

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prosperously, the figures which make these exhibits are misleading. For the cost of penal administration is not to be diminished in the long run by merely getting the utmost possible profit out of the labor of the convicts, but by the return of the largest proportion of these convicts to habits of honest industry. The self-supporting prison may be doing nothing to minimize crime, and its inmates may be returning again and again to serve fresh sentences. As a rule there can be no doubt that when the desire to make a prison self-supporting is supreme, the moral effect of the system disappears altogether, and in the end the State loses very much more than it gains. Economy is of course imperatively demanded, but this again is one of the arts which would be taught in a normal school for training prison officers.

The contract system, as we have shown, has almost invariably produced better economical results than that about to be introduced at San Quentin, but nevertheless it is little known how many failures in manufacturing enterprises have occurred there since the prison was first established. We have inquired into this matter, and have ascertained that the following long list represents the past failures in manufacturing industry at the State Prison: Iron safes; foundry and stove castings; plows and agricultural implements (two attempts); boots and shoes (two attempts); coopering; wagons and buggies; brooms; stocking knitting; manufacture of sewing machine needles; shirt making; needlework by machinery; house moldings; packing boxes, of wood and paper. Every one of these industries has been tried with prison labor and abandoned, to the loss of a large aggregate amount of capital, and to the injury both of convicts and contractors. Some idea may be gathered from this exhibit of the past failures, as to the difficulty which threatens the experiment about to be undertaken.

That experiment could hardly have been commenced less auspiciously. A quantity of machinery has been purchased in England with so complete an absence of precaution that when it arrives here it must be paid for before it is delivered; that no provision whatever has been made for testing its efficiency; that no provision has been made for setting it up at the prison by any other than unskilled labor; that when it is set up no guarantee has been obtained that it will work; that if it should prove an utter failure there are no means of compelling the manufacturer to take it back, or to make good any deficiency.

It is, indeed, possible, by a return to the methods so clearly prescribed by the Constitution, to avert, at least in some measure, the serious and multiplied evils threatened and caused by the inexcusable abandonment of the State penal administration to the politicians. But this is the only possible means of economy and reform. As the case stands the labor of the convicts at San Quentin is about to be committed to a process of manufacture requiring constant and intelligent supervision, both inside and outside the prison; and this supervision is apparently to be intrusted to men chosen for their politics alone, and possessing as little knowledge of commerce and manufactures as of penal science. It would seem that nothing short of a "spiritual miracle" was capable of producing good results from such conditions as these, and since we are not justified in counting upon supernatural intervention in mundane affairs, the unavoidable presumption is that the experiment will be a conspicuous failure unless radical changes in the administration are forthwith instituted.

INDETERMINATE SENTENCE.

In pursuance of our examination of the whole question of penal discipline, we proceed to the question of sentences. It is evident that when a proper system of labor has been determined upon, and every arrangement made for the application of reform machinery to the convict, the utility of these preparations must be practically determined by the length of his imprisonment. It may be set down as an axiom in penology, that short sentences are to be deprecated. It is impossible under them to apply any reform system, and they consequently have no deterrent effect, and in practice only enhance the expense of maintaining habitual criminals, while confirming the latter in their evil habits. This reasoning applies with equal force to juvenile reformatories and adult penitentiaries. The first necessity in penal science is a sufficient length of time in which to operate. And the difficulty of arriving, by arbitrary methods, at a satisfactory standard for criminal sentences, has led many penologists to advocate indeterminate sentences. This form of sentence was first proposed by Mr. Frederick Hill, and warmly defended and very ably expounded by his brother, Matthew Davenport Hill, the well known Recorder of Birmingham. A somewhat similar theory was approved by Captain Maconochie, the difference being that he proposed to sentence men, not to a certain term in time, but to earn a certain number of marks. In the latter case the length of the sentence depended entirely upon the industry and good conduct of the convict, and in the indeterminate sentence a very similar result would be attained. The arguments advanced in support of the indeterminate sentence appear to us to be very strong. In the first place, it is conceded that the primary object of punishment is the protection of society. In the second place, experience shows that this end can be best attained by the diminution of crime. In the third place, it seems to follow that society has the right to accomplish this protective aim by the most efficient methods. In the fourth place, it is apparent that the most efficient method must be the reformation of the offender. In the fifth place, it is argued that the offender ought to be retained in prison until his reformation is completed. There are many and high authorities for the proposition. Thus Dr. Despine, of France, a most distinguished penologist, goes so far as to say that the use of this principle will become a necessity whenever a really reformatory system of prison discipline comes to be generally introduced and pursued in sober earnest. It is obvious that if the protection of society is the ultimate end of imprisonment, and if the convict goes out of prison the same as he entered it, this end remains unaccomplished. To shut a criminal up a few months or years is not to make him any the less a criminal. He will return to his plundering when he is liberated, and will continue to be a thorn in the side of society. To prevent this relapse into evil habits, there is no conceivable recourse but that of systematized reform agencies, and to apply them with anything like precision, it is evident that a practically unlimited period is required.

A criminal is a morally sick man, and it is necessary to cure him. In many respects he may be compared to the intellectually sick, called the insane. We commit the latter to the asylum as a matter of course, and never think of naming a term of confinement. The rational assumption is that the patient will be kept in the asylum

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until he is cured. It would seem no less rational to make this assumption in the case of the criminal, and it would seem to be more just to him also. For it is evident that under existing methods sentences are imposed in a very unequal and haphazard manner. The law lays down certain broad limits as to time and as to character of offense, and within these limits the Judge exercises his discretion. But it is notoriously the fact, that while hardened criminals are often brought up for sentence on conviction of offenses which permit only light penalties, young offenders are often perforce sentenced, under similar conditions, to terms which are far too severe for the real criminality of their breach of law. Now, if sentences were indeterminate, it is apparent that the young criminals would work out their release much more quickly than now, because all their real innocence of mind would tell in favor of them; whereas, the habitual criminal would receive proportionately severe punishment, being in effect made liable under this principle to cumulative penalties.

It is not to be supposed that a proposition which involves so radical a change in established practices and laws will find speedy acceptance. All the instincts of conservatism, which work so powerfully for the retention even of existing abuses, will fly to the support of the old methods. Nor is it to be denied that the introduction of indeterminate sentences, to be safe or effective, must be preceded by the separation of prison administration from politics. To introduce such a principle under the present condition of things would indeed be most dangerous, for it would give to the political managers of the prison the most terrible machinery for controlling and abusing the prisoners, and while they would be divested of responsibility they would be tempted in many ways to make an evil use of the extraordinary powers conferred upon them. Indeed, it may be considered out of the question to propose such a change as this seriously, until the first indispensable reform in penal administration has been accomplished.

But it is in order to point out that wherever in this review we have been led to the indorsement or advocacy of any important principle, the chief and in nearly every case the sole obstacle to its adoption, has proved to be the connection of the prison system with politics. This is, in fact, the great impassable barrier to progress and reform, alike in prison management and in the transaction of public business. The insidious and demoralizing influence of politics meets us at every turn. It baffles and sets aside constitutional requirements. It completely destroys the efficacy of arrangements intended to promote economy. It insinuates itself into the most subordinate matters, thrusting partisans into responsible offices, causing physicians to be selected from other than professional reasons, encouraging carelessness, leading to irresponsibility and extravagance and incompetence in every department. The curse of political interference is apparent in every instance of wrong, error, and illegality, which it has been our painful duty to expose and condemn in this report; and we should have missed the one great lesson of the investigation, if we failed to impress upon your Excellency the absolute necessity of eradicating this blighting influence, before any genuine or permanent reform in prison administration can become possible.

PRISON EDUCATION.

The question of prison education is one which has been very exhaustively discussed by penologists, and we are satisfied of its importance. The education which is to carry out the purposes of society, however, must in our opinion be broader than has been generally proposed. The principal source of useful education to the convict, and the one mainly relied on for reformatory influence, should be the industrial system of the prison. The first, and, we might say, the last thing to insist upon is the necessity of forming good habits in the convict. In working toward this end, it must be remembered continually that the object is to make the criminal like labor, not to disgust him with it. Impatience of steady toil is in a large proportion of cases the first incentive to criminal practices, and the habitual criminal is usually, partly from inherited tendencies, and partly from environment and habit, almost incapable of persistent application. Now, to force men of these types to labor, as is too frequently done in the English prisons, for no other apparent object than to punish them, is to cultivate in them an increased abhorrence of everything in the shape of work, and so to render all prospect of their reformation hopeless. The only way to make the convict like work is to present it to him in such a way that he regards it as a means, and not an end. If he is given to understand that by learning a trade and pursuing it industriously, he can earn increased comforts and privileges for himself, or can shorten the term of his imprisonment, he will learn it as quickly and as completely as possible, and he will practice it not only without reluctance, but with cheerful alacrity. On the same general principle it is necessary that whatever trade the convict is taught, he should be enabled to master. Under the contract system he was seldom taught a full trade. He was put at some single detail, and if he showed aptness he was kept at that steadily, and on leaving prison had learned nothing more than that one process. There are scores of convicts now at San Quentin who have been treated in this way, and the fact discloses another of the inherent evils of the contract system.

When all that can be done in the inculcation of habits of industry has been accomplished, there still remains a need for intellectual education, however, and it is the duty and interest of the State to supply this demand. Of late years it has been the practice to build up prison libraries, and there is now scarcely a prison in the United States which does not possess one. The library, if judiciously and somewhat liberally selected, is no doubt of the very greatest comfort and utility to the convicts, and all of those who are unable to read and write should be taught by a prison officer those arts, and the elements of arithmetic. Such higher instruction as it is considered desirable to give them should take the form of lectures. In these a great deal of valuable and suggestive information could be conveyed. It is important that the criminal range of mental vision, which is always exceedingly narrow, should be enlarged, and there is no more hopeful way of doing this than by leading the convict to reflect upon the wonders of nature and of science, and the progress of mankind through barbarism to the crude and imperfect civilization of the present day. Lectures on the origin and laws of social organization, showing how the conventions which restrain men from the general practice of wrong and violence came to be formed, would have a strong

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tendency to suggest more enlightened ideas for the convict audience, and in the treatment of such subjects the general policy of the prison administration would be quietly but steadily carried forward, and the criminals be almost insensibly lifted into a higher stage of intellectual existence.

In many works on penology the power of religious instruction in the prison is strongly insisted upon. This is partly accounted for by the fact that many of these works are written by clergymen. If religious instruction is thus influential, of course it ought to be employed as freely as possible. That it has some value, we may unhesitatingly admit, and therefore it should be recognized as part of the machinery of reform. But a careful examination of the State Prison at San Quentin, and as careful research into the history of reform efforts in other penal establishments, together with a comparison of the prison conditions with those of free life, have compelled us to the conclusion that, however valuable this kind of instruction may be under special circumstances, it would be unsafe to rest any important part of a reformatory system upon it.

SUGGESTIONS OF PENAL SCIENCE.

Active employment in congenial industry; such intellectual education as will stimulate reflection, imagination, and the love of knowledge for its own sake; these seem to be the mainstays of penal reform at present. But it is probably true that to give them their full usefulness, and perhaps to give them usefulness of any considerable kind, their application must be prefaced with a sharply punitive experience. For it is necessary to make the convict understand thoroughly that he is not the pet of society. He must be shaken rudely out of any such delusion. He must be forced to realize that if reformation is the ultimate aim of his imprisonment, punishment is its primary purpose. And, therefore, the introduction to the reform system should be through a strictly penal stage of cellular confinement, on low diet. This preliminary experience takes all the romance out of the convict, and, by giving him a full taste of the misery of enforced idleness, opens the way for the introduction of systematic labor in the form of a pleasure instead of a punishment. This, it will be observed, is the natural course of reformatory discipline. It does not depart from the actual tendencies of human experience in any essential. Whoever violates the laws of nature suffers the penalty, without remission, but without passion. Whoever by neglect of such laws falls into adversity, must climb thence with pain and toil, and must liberate himself or he will not be freed. This is the principle upon which penology must proceed. Crime is adversity. The criminal must liberate himself from it, and he is enabled in this struggle to effect his liberation, to equip himself with habits of industry, perseverance, and self-reliance, which are the most effective means of preventing relapse, and of gaining an honest livelihood. To say that reformation by these methods is impracticable, argues a very imperfect study of the habits and tendencies of mankind. Such reformation is being effected continually outside the prison walls. There is probably no adult man or woman who cannot adduce many instances of it from his or her personal experience. It is the one way in which men and women do frequently lift themselves from evil to good, and succeed in separating themselves from

a vicious past. There is nothing in the system which has not been verified by myriad experiments, and it is, therefore, in harmony both with the requirements of absolute justice and the experience of practical life. It is in effect the natural system of reformation, and, therefore, the most scientific system.

IRRECLAIMABLE CRIMINALS.

There is a class of habitual criminals who are, however, probably incorrigible, and it by no means follows that these should be the oldest in years. The most hopeless cases are those in which heredity and environment have combined to mould the character. Heredity, as we have endeavored to show in a former part of this report, exercises a powerful influence over character. This influence may sometimes be successfully combatted, but when, as frequently happens, the mind of the hereditary criminal is abnormally feeble, it is very difficult to remove the tendencies toward evil. This problem of the irreclaimable criminal is a very perplexing one. Perpetual imprisonment has been proposed, not as a remedy, but as a method of paralyzing the evil rather, and there is much to be said in its support. The mischief which the irreclaimable criminal does to society by his personal crimes and breaches of the law is, however, comparatively insignificant when weighed against the evil he perpetrates in perpetuating his species, and thus reproducing and transmitting to posterity all the morbid and sinister conditions which distinguished him from physically and morally sane men. His example must of necessity be demoralizing as long as he is at liberty. The theory of indeterminate sentences, which we have already considered, involves the perpetual imprisonment of the incorrigible, since it requires the retention till reformation, of all who are sentenced. Pike, in his "History of Crime," observes in this connection, "Perpetual imprisonment of the irredeemable—imprisonment not only nominally, but for life—would be one among many causes of that change in the general tone of society which is shown by history to be the greatest preventive of crime as now understood. Like persons having the scarlet fever or other infectious malady, the propagandist criminal should be confined in his proper hospital—a prison—and if incurable, should be detained until his death. Like consumption or other hereditary diseases, the criminal disposition would in the end cease to be inherited, if all who were tainted with it were compelled to live and die childless. The remedy may be painful, and even cruel, but perhaps greater cruelty and greater pain may be inflicted by the neglect which leaves physical and social ills to spread themselves unchecked." It is by no means impossible that society may be forced to this form of treatment ultimately, as the only available means of stamping out the insidious and malign tendencies which have hitherto crept down from generation to generation, preserving the criminal fires in the hearts of men with more than the vigilance which superstition exercised over the sacred flames of the Vestals.

AID FOR DISCHARGED PRISONERS.

It is not at the prison gate that penology can part with the released convict, however. Unfortunately there are problems beyond that

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point which are so stubborn as sometimes to suggest despair of better things. It is in vain that science does its best; it is in vain that habits of industry are implanted; it is in vain that the mind of the late criminal is filled with a determination to live honestly thenceforward, if society refuses to fulfil its part in the compact, and will not accept the reformation of the discharged prisoner as genuine, or put any confidence in his good resolutions. We may refer to the interesting and valuable testimony of Captain Lees for illustrations of the hard usage which the released prisoner has as a rule to put up with. Society is cruelly fickle and inconsistent in this regard. It demands the reformation of the criminal by all possible appliances; yet it refuses to recognize any reformation as real. The man who leaves the Penitentiary at San Quentin is marked. He is assailed from several quarters. In the first place, if he belongs to the criminal classes, his former associates are on the watch for his release, and hasten to celebrate his return to his old haunts by an orgy in which all his good resolutions are washed away, and he is once more plunged into the criminal atmosphere. In the next place, he is under the surveillance of the police. If he seeks honest work and obtains it, he is always in danger of exposure by some officious and stupid, or dishonest and unscrupulous policeman, who either tells his employer what he has been through honest zeal, or threatens the convict with the disclosure to make him pay hush money. But it is not only the police who dog and harass the reformed convict. His deadliest enemies are his former friends and his prison comrades. The discharged convict who obtains steady work is sure to be made the prey of the irreclaimable convicts with whom he may have nothing in common but the memory of a mutual punishment. The convict who will not work, and who takes pride in his idleness and his vice, despises the one who seeks to reform, and plunders him without mercy.

Sometimes perhaps cases may occur in which the victim is able to follow the advice given by Captain Lees under similar circumstances, and knock the blackmailer down; but too frequently the reflection that exposure must ruin his prospects and drive him back to crime paralyzes the unfortunate creature, and he yields to the demands made upon him. Yet, such is the irony of fate, if he yields he is lost. For the convicts make a common raid upon him, and presently he finds that he is paying out all he earns to these wretches, who are quite capable of denouncing him to his employers the moment they find that his money is all gone. Under this pressure the reformed convict is almost certain to succumb. Despair takes possession of him. Every avenue of escape seems closed. If he tells his employer the truth, he apprehends (and with justice) instant dismissal. If he attempts to keep his dismal secret, he must continue to work indefinitely for the benefit of a crowd of miscreants who have no mercy and no moderation, and who desire nothing better than that he should become one of themselves in spite of his good resolutions. There are not many men, even among our ablest and purest and wisest, who, if placed in such a situation as this, would have the strength necessary to bear them safely through the trial. And, indeed, such a situation is in the nature of things unendurable, since no man could go on without hope of relief, buying the precarious silence of these scoundrels. A time must come when his patience is exhausted, and then whatever course he takes, the probabilities against his retaining his virtue are discouragingly great.

To meet the evils growing out of these conditions, and to give the freed convict a fair and full opportunity to prove the reality of his reformation, organizations called Discharged Prisoners' Aid Societies have been formed, in all the countries of Europe, and in nearly all the States of the Union. These are volunteer charitable associations, but, like many others of the same order, they have been frequently assisted by State appropriations, and such assistance is, under all the circumstances, not only justifiable, but necessary. The Prison Congress of London, held in 1874, declared that, "if a sound system of prison discipline is desirable, it is no less expedient that the prisoner, on his discharge, should be systematically aided to obtain employment, and to return permanently to the ranks of honest and productive industry. For this purpose a more comprehensive system than has yet been brought to bear seems to be desirable." The Cincinnati Prison Congress was even more emphatic on this subject. It said: "More systematic and comprehensive methods should be adopted to save discharged prisoners, by providing them with work, and encouraging them to redeem their character and regain their lost position in society. The State has not discharged its whole duty to the criminal when it has punished him, no more than when it has reformed him. Having lifted him up, it has the further duty of aiding to hold him up. In vain shall we have given the convict an improved mind and heart, in vain shall we have imparted to him the capacity for industrial labor and the will to advance himself by worthy means, if on his discharge he finds the world in arms against him, with none to trust him, none to meet him kindly, none to give him the opportunity of earning honest bread." These are truths the force of which must be admitted by all who have examined the subject. It is unquestionably true that the work done by the State in reforming the convict is liable to be neutralized and wasted completely, unless provision is made for the extension of material assistance to him when he leaves the prison.

The work ought not to be left to voluntary organizations, moreover. It is in our judgment as much a part of the State's special work as the institution of preventive establishments, such as juvenile Reformatories, houses of detention, and so forth. The State undertakes, in the interest of society, to reform the criminal, in order that crime may be diminished. What would be thought of the management of a hospital if, after curing a man of typhus fever, they were at once to put him in a ward where the same disease abounded? Something very like this, however, is done by the State, when, after devoting time and capital to the reformation of its criminals, it sends them forth upon society under conditions which render it almost impossible for them to gain their living honestly. The methods by which the discharged prisoners shall be aided are, of course, various, and differ in different countries. In some instances it has been found advantageous to have a sort of headquarters, where temporary employment and lodging could be furnished applicants, but in the majority of cases the endeavor is to find work for the prisoners at once. The prisoners discharged from Mountjoy, in Ireland, where the Crofton system obtains, are said to be in so much demand that their services actually command a steady premium, while the percentage of relapses among the graduates of that system is so small as to be scarcely worth calculating. This is the end to which all prison systems are or ought to be working, though until American prisons

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are delivered from the body of the political death that has thus far paralyzed them, it will be useless to anticipate the most satisfactory results.

The need of more active efforts in this direction in California is shown by the large number of convicts who are sent back to the penitentiary for repetitions of the same offense. We have before us an exhibit giving the number of recommitments of this kind, and it is a melancholy proof of the monotonous persistence of criminal habits. The same man, for instance, has received five convictions for burglary and house-breaking. Another has been in prison six times for larceny and burglary. And the influence of evil associations is shown in the fact that in many of these cases the convict is only at liberty two or three weeks between his sentences. Such a man gets two years for grand larceny. He serves it, and less than a month from the date of his release he is back again, for the same offense. It looks as though many convicts went deliberately and repeated the crime for which they were originally convicted, the moment they are discharged. As a fact there can be no doubt that the majority of them fall at once into the companionship of men of their own proclivities, and as there is no reformatory influence in the State Prison system they have no motive or disposition to refrain from the courses which they had been pursuing before. If the efforts of the California Prison Commission have not produced the most encouraging results hitherto, the fact must, we think, be ascribed to the total absence of any reformatory machinery at San Quentin. Indeed all the tendencies of that prison, or almost all, are distinctly demoralizing, and it is a matter for real surprise that any man who has served a term of imprisonment there should be capable of leading an honest life subsequently.

JUVENILE REFORMATORIES.

No examination of penal administration would be complete without some consideration of the deterrent agencies which are now recognized as a necessary part of every reform system. It is, of course, far easier to reclaim the young than the adult. If this truth has not been developed by the experiences of the juvenile reformatories which have been instituted in California, it is because the methods employed have been such as would have insured failure under any conceivable circumstances. The same system which has proved efficacious when applied to adult criminals, will assuredly cure the younger offenders. These are, doubtless, more mercurial, but they are also more impressible than their seniors. The habit of idleness is not so firmly rooted in their characters. Their most repulsive vices are often little more than imitations, and do not indicate deep-seated depravity. By the exhibition of firmness, system, and emulation, they can, beyond doubt, be reformed. Indeed, when we reflect what has been done in this way elsewhere, we are tempted to dismiss with impatience the gloomy declarations of our pessimists. Take for example the Colonie Agricole, at Mettray, in France, and see what Demetz has accomplished there. He has no jail, no cells, no dungeons, no punishment cells, no guards with loaded rifles and mitrailleuses, no methods of coercion whatever. The colony is merely a collection of brick buildings, surrounded by a not high wall, situated in an open agricultural country. Yet there the gamin of Paris—

nearly as corrupt and hopeless a product of the nineteenth century civilization as the "hoodlum" of San Francisco—is effectively tamed and reclaimed, and is converted into the honest, hard working *ouvrier*. or the gallant and disciplined soldier or sailor. What has been done at Mettray can be done anywhere. The system is capable of application here quite as well as there. Human nature is the same all over the world. It is by reposing confidence in these young outcasts, in stimulating their ambition, in cultivating their self-respect, in giving them something to hope for, and something to be proud of, that their characters are changed and they are reformed.

The juvenile reformatories of this State can be converted into real deterrent agencies whenever the people are ready to make the change. The condition of their transformation is not a hard one. It is simply the complete separation of these institutions from politics. They must be given over to penal science. They must be governed in accordance with advanced ideas. Their inmates must at once be taught to recognize the weight of authority, and to appreciate its good will and breadth of purpose. And to them, as to the adult penitentiaries, must be applied the natural system—the methods which most resemble the course of events in the outside world. But when the people are ready for reform it will come; and not until they declare their determination to have it, will the evil influences which have baffled all attempts in that direction, both in our juvenile and adult prisons, be overcome and removed.

NEED OF WIDE JURISDICTION.

The Constitutional Convention appears to have taken the provision concerning the government of the State Prisons almost entirely from the article drawn by the New York Prison Association for insertion in the Constitution of that State, in 1868. The language is, in fact, identical, and the ideas of the New York society have been reproduced, with scarcely a change, in our new Constitution. The New York plan created a "Board of Prison Managers," organized precisely as our Board of Prison Directors is; and it did not limit the jurisdiction of this Board to the State Prisons. "Such Board," the article provided, "shall have the charge and superintendence of the State Prisons, and shall possess such powers and perform such duties in respect to the county jails, the local or district penitentiaries, and other penal and reformatory institutions, within the State, as the Legislature may by law impose upon them." Here was an enlightened endeavor to remedy one of the most serious evils to which prison administration in the United States has hitherto been exposed; an evil which in its effects is only less disastrous than political interference and greed. For a vital defect of all American prison systems is the absence of a central authority. Not only is there no national prison system, but the State systems are in nearly every instance fragmentary and disconnected. The California Constitutional Convention followed the New York idea, with little alteration, but the State Legislature has failed to extend the jurisdiction of the Board of State Prison Directors over the county jails, municipal prisons, and reformatory institutions. This is an omission which can be remedied, and which the Legislature, in our opinion, should supply at the earliest opportunity.

It should be apparent to all that it is impossible to have a really

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effective reformatory prison system, unless the whole subject of criminal administration is regulated in accordance with a definite and harmonious scheme. It is necessary to take crime at its beginnings, and to follow it to its end. The systematic supervision of the juvenile reformatories, of the county jails, of the city prisons, of the houses of detention and correction, is as indispensable as the proper management of the State Prisons. In the county jails of the interior our inquiries show that there is no attempt made to employ the prisoners; that they are permitted to associate freely; that they are in fact simply and solely restrained of their liberty, and allowed to amuse themselves as they choose. Witnesses and unexamined accused persons are locked up in company with convicted prisoners in all these establishments, and there is no pretense of system in any of them.

It follows from these facts that the county jails, so far as they exercise any influence, exercise a vicious one; that they do not do anything to abate or prevent crime while they afford immense opportunities for the propagation of criminal ideas and habits; and that in some respects they tend positively to corrupt the innocent or the presumably innocent. The Board of Prison Directors, however, possess no authority in the matter. They cannot interfere with the counties or the cities in any way. The result is that the State Government is compelled to confine its attention to the penitentiaries, and can do nothing to abate the criminal proselytism which is being carried on through the county jails and municipal prisons and places of detention. It is, we submit, evident that what is needed here is a wider jurisdiction for the Board of Prison Directors. If we are to have penal reform we must put all our prisoners under one management, and give the central authority ample power to regulate and control them. Hitherto we have been very much in the position of a State which should undertake to establish a University without first providing a public school system. A community which should attempt to depend upon casual instruction, or such private schools as might grow up, or upon public schools conducted without any system, and each upon its own peculiar basis, would soon find that education under such conditions was impracticable. Yet it is education with which penology deals, and there is quite as much necessity for system and harmony in the prison administration of a community as in that of its schools and colleges.

A CENTRAL AUTHORITY.

The new Constitution, following the New York example, gave us a Board of Prison Directors. As this report demonstrates, the workings of that body have not been such as to inspire confidence in its fitness. In the present case the outcome may be largely due to individual shortcoming and incapacity, but when these factors have been allowed for, there remain objections to the principle of a Board which appear to us so strong as to justify the suggestion of a change. As such a change can only be made by an amendment to the Constitution, there is no danger that it will be too hastily adopted, and therefore we feel the freer to propose and discuss it. It appears to us that what is needed to put in motion and carry out a really intelligent and comprehensive system of penal reform, is a single central authority, with extensive powers. Such an officer might be designated Prison Commissioner, or Superintendent of Prisons, or Penal Administrator, or whatever the Legislature chose to call him. He would be alone in his office, however. He would have sole control of all the prisons in the State. There would be no division of responsibility; none of those reasons for neglect or inaction which the instability of a Board gives opportunity for. There would be no room for conflict of opinion, or cross purposes, or local influences and restraints and prejudices. An unpaid or insufficiently paid Board, unless selected with a care and judgment which it would be unwarrantable to rely upon, is sure to come to perform its duties in a perfunctory manner. In this case the inevitable tendency of such a Board is to gradually leave more and more to the Warden of the prison. The Directors find it much easier to acquiesce in his suggestions than to originate ideas of their own. Besides, they consider, the Warden is always on the spot, and must have better opportunities of judging than they have. In the end they are very apt to let the Warden have his own way in most things, and thus the initial purpose of their appointment is completely lost sight of, and their functions, as contemplated by the Constitution, are practically abolished. A single Commissioner, who should be paid a sufficient salary, and whose whole time should be devoted to the duties of his office, would be free from all these drawbacks. He would have no excuse for remissness, and no escape from the most direct responsibility. Of course if such an officer were substituted for the Board of Directors, it would be indispensable that he should be a trained penologist. That would be a *sine qua non*. It is, in fact, the very essence and *gravamen* of the whole proposition. We seek to exclude politics absolutely, and to commit the State as absolutely to scientific reform. We desire to do away with all unscientific machinery, and to begin again upon a new basis. In order that this may be possible, we recommend the change here outlined as one which appears to be thoroughly reinforced by a careful examination, both of the existing condition of things in this State and the most advanced teachings of penal science elsewhere.

ARGUMENTS FOR REFORM.

In the preceding pages we have endeavored to show, by references, illustrations, arguments, and comparisons, how best the interests of society can be subserved in the treatment of the criminal classes. The suggestions we have made, and the descriptions we have given of reforms which have been adopted in other countries, indicate no capricious, sentimental, or fanciful theories of criminal administration. If we have succeeded in any part of this report, we trust that we have not wholly failed in showing the economic significance of penal science. It is true that there is room for sentimental considerations in this broad and complex subject. It is open to every one to be concerned for criminals, because they are "men and brothers;" or because they may be brought to a sense of their sinfulness, in a religious point of view; but from a purely practical standpoint the demand for their reformation is quite as strong and urgent as it can be from spiritual or other points of departure. And this constitutes at once the peculiarity and the cogency of the argument for penal reform; that no matter how we view it, its usefulness and its necessity appear equally conspicuous. The economist argues that reformation is demanded because the increase of crime means the increase of taxation, and the decrease of crime the diminution of taxation;

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because every criminal is a burden upon the community, alike when free and when confined; because crime breeds crime, and thus the spread of immoral conditions operates like compound interest, and establishes a cumulative impost upon society. Thus penology possesses the singularity of being the only common ground upon which the egotist and the philanthropist, the skeptic and the religionist, the economist and the poet, the idealist and the practical man, can meet in thorough unison. There is not, indeed, any class in the community which ought not to be heartily in favor of the reforms here proposed, and eager to do away with the abuses here pointed out.

RESUME OF LOCAL DEFECTS.

It is therefore the more incumbent upon us to declare, that in the so-called prison system of California, as it exists to-day, almost everything requires to be reorganized. In point of fact, this State has never had a prison system. The penitentiary at San Quentin has been a place of detention, and very little more. Efforts have been made, spasmodically, to give employment to the convicts, but there has never been a time when fifty per cent. of them had steady work, and for years, less than twenty-five per cent. of them were employed. No classification has ever been attempted; promiscuity of association is the rule. There are rooms in the prison in which from twenty to twenty-five convicts are confined every night. In the smallest of the cells, two convicts are regularly placed. There is no separate imprisonment, save for punishment, in the dark cells. There is no attempt to prevent conversation among the convicts at any time. The work that is given those who are employed in the shops by the contractors, is not of a kind to be of any future use to them, for the most part. A convict is put to do some particular thing, and if he succeeds, he is kept at that continually, and never learns any more of the trade. The contractors, of course, only seek to make the convict labor as profitable as possible.

The commutation system, which the so-called Goodwin Act introduced, has been perverted. At present a convict is credited, on entering the prison, with the whole of the credits allowed for his term under the provisions of the law. He is given these credits without any reference to his merit. If he misbehaves himself he may be deprived of some of his credits, but it only requires negative goodness on his part to earn them. In the application of the law there is, therefore, no test made of the prisoner's real tendencies. Though it was doubtless intended by its author to produce similar effects to those of the mark system, the Goodwin Act, as administered, produces no good effect at all. Its only influence is indeed mischievous, for the convict, after having been sentenced, let us say, to five years' imprisonment, finds on entering the prison that in consequence of the existence of a law which he does not understand, one fifth of his sentence has already been remitted without any reference to his own behavior. This of course tends to bring the administration of the criminal Courts into disrespect. It has, however, another effect, already adverted to. It induces the Judges to discount the remissions of the Goodwin Act, and to so extend the sentence as to make the convict serve out at least as long a term as he would have done had the bill not existed. The present method of commutation, in fact, is altogether wrong, and ought to be amended. This, however, is quite on a par with the whole of the system. No serious attempt at the reformation of the convict is attempted. A "moral instructor" converses with such as desire to hear him upon religion; a class is now and then gathered for elementary instruction; there is a library containing a few hundred books and magazines which have been raked together in the course of years, without any regard to their selection or relevancy. The convicts are, in fact, virtually left to themselves, and in many cases they make disastrous use of their opportunities.

The prisons of California, in short, are practically virgin soil as regards the question of reform. They have been neglected all these years because politics has controlled them. The convicts have been looked upon as so many wild beasts who were to be kept from breaking out by Gatling guns and rifles. The idea that there was a science of penal administration has never occurred either to Directors or Wardens. Both have gone on in the old grooves, occasionally introducing new abuses, until the prisons of the State present a monotonous uniformity of badness which calls urgently for sweeping reform. Their condition is such that timid or partial reforms can do no good. The whole system must be rooted up before any healthy scheme can be established.

CONCLUSION.

Before concluding this report we desire to bear testimony to the generous effort made on your part to facilitate our work. Our acknowledgments are also due to the Wardens and Clerks of the prisons for courtesies and assistance. You were pleased to urge upon us a faithful, just, and impartial discharge of the duty committed to us. We have earnestly sought to meet the obligation resting upon us fully and fairly. We are free now to confess that had we realized the magnitude of the work your instructions imposed, our sense of public duty would not have been sufficiently strong to overcome our reluctance to enter upon the discharge of so great a task. Having, however, incurred the responsibility involved by our acceptance, we have labored earnestly to conduct our investigations with impartiality and to form our judgment without prejudice. We entered upon this investigation free from personal bias against any of the gentlemen connected with the prison administration. We believe we have conducted the investigation impartially, and close our official relation with the subject without distrust of the equity of our judgment. We have made only such general examination of the books of the prisons as would enable us to form a general judgment of the manner in which accounts are kept. We deemed ourselves absolved from this duty by reason of information conveyed to us by your Excellency, that you would appoint a competent expert, to whom that duty would be assigned. We have not presumed to offer any suggestion or recommendation as to executive action upon matters herein presented. We have not deemed such suggestion either appropriate or necessary. It belongs to you to determine as to whether any of the delinquencies of administration or subversion of the organic law

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complained of constitute a breach of the high trust reposed by you in the members of the Board of Directors. We present no claim for personal services, nor shall we at any future time prefer such claims.

Accompanying this we present the claims of the Secretary, Sergeant-at-Arms, and official short-hand reporter, who have served us during the investigation. These claims have been carefully examined by us, and allowed as just and reasonable. We submit for your examination a full transcript of all the testimony taken before us, accompanied by copies of records and documents comprising the evidence upon which this report is based, and which, as we believe, will justify our conclusions and judgments in all cases. We have omitted all reference to matters whereon we did not find a complete concurrence of judgment, and have presented only such conclusions and findings as represent our unanimous verdict. Trusting that much good will result from the public attention attracted to this important subject, we ask to be discharged from all further official consideration of the matters submitted.

WM. H. MILLS,
ROBERT WATT,
F. A. GIBBS,
Special Commissioners.

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